SpiralEd Solutions

8th Grade Spirals

SpiralEd Solutions
PO Box 23942
Waco, TX 76702
spiraledsolutions.com

SpiralEd Solutions

Spiral 1

1 (8.2A)

Which list shows a set of numbers that are integers, but not whole numbers?

A $\{-4, 5, \frac{6}{3}, 1.4\}$

B $\{-4, -5, -\frac{6}{3}, -2\}$

C $\{-4, -5, -\frac{2}{3}, -2\}$

D $\{-4, -5, -\frac{8}{2}, \sqrt{2}\}$

2 (8.2A)

Which number is not included in the set of rational numbers?

F $\frac{12}{2}$

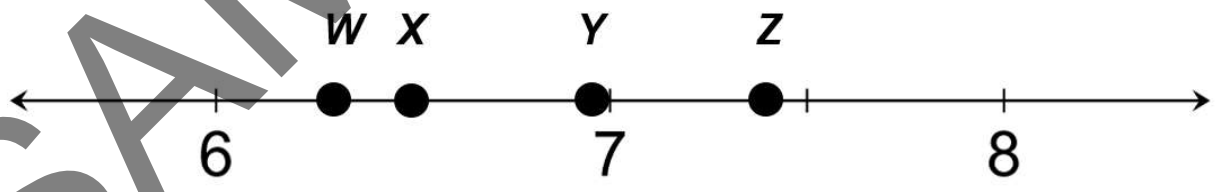
G $3.\overline{3}$

H π

J -4.6

3 (8.2B)

Which point on the number line best represents the location of $\sqrt{48}$?



A Point *W*

B Point *X*

C Point *Y*

D Point *Z*

SpiralEd Solutions

Spiral 2

1 (8.2B)

Point *R* best represents which value?

F $\sqrt{3}$

G $\sqrt{2}$

H $\sqrt{5}$

J $\sqrt{4}$

2 (8.2C)

Abel researched the populations of the five largest cities in the United States and found that New York City has a population of 8.6 million people. How is this number written in scientific notation?

A 8.6×10^5

B 8.6×10^6

C 86×10^6

D 0.86×10^7

3 (8.2C)

How would 8.21×10^{11} be written in standard notation?

F 82,100,000,000

G 0.000000000821

H 82,100,000.000

J 821,000,000,000

SpiralEd Solutions

Spiral 3

1 (8.2D)

Which list shows the numbers below in order from least to greatest?

$$\frac{2}{3},\ 64\%,\ 0.625,\ \frac{13}{20}$$

A $0.625,\ \frac{13}{20},\ 64\%,\ \frac{2}{3}$

B $0.625,\ 64\%,\ \frac{13}{20},\ \frac{2}{3}$

C $\frac{2}{3},\ 64\%,\ 0.625,\ \frac{13}{20}$

D $\frac{2}{3},\ \frac{13}{20},\ 64\%,\ 0.625$

2 (8.2D)

A quilter plans to sew a diagonal strip of fabric across each of 4 quilts. The length of each diagonal is listed in the table.

	Length of Diagonal
Quilt 1	$2\sqrt{41}$ ft.
Quilt 2	18.4 ft.
Quilt 3	15.62 ft.
Quilt 4	$\sqrt{225}$ ft.

Which list shows the quilts in order from greatest diagonal to least?

F Quilt 1, Quilt 3, Quilt 2, Quilt 4

G Quilt 2, Quilt 4, Quilt 1, Quilt 3

H Quilt 1, Quilt 3, Quilt 4, Quilt 2

J Quilt 2, Quilt 3, Quilt 4, Quilt 1

3 (8.2D)

Death Valley National Park has the greatest variation in elevation of any U.S. National Park. The table lists the elevation of places of interest within the park.

Location	Elevation
Furnace Creek	-0.058 km
Hog Ranch Mountain	2.22 km
Badwater Basin	- 0.086 km
New Ryan	0.92 km

Which list shows the elevations from least to greatest?

A Badwater Basin, Hog Ranch Mountain, Furnace Creek, New Ryan

B New Ryan, Badwater Basin, Furnace Creek, Hog Ranch Mountain

C Hog Ranch Mountain, New Ryan, Furnace Creek, Badwater Basin

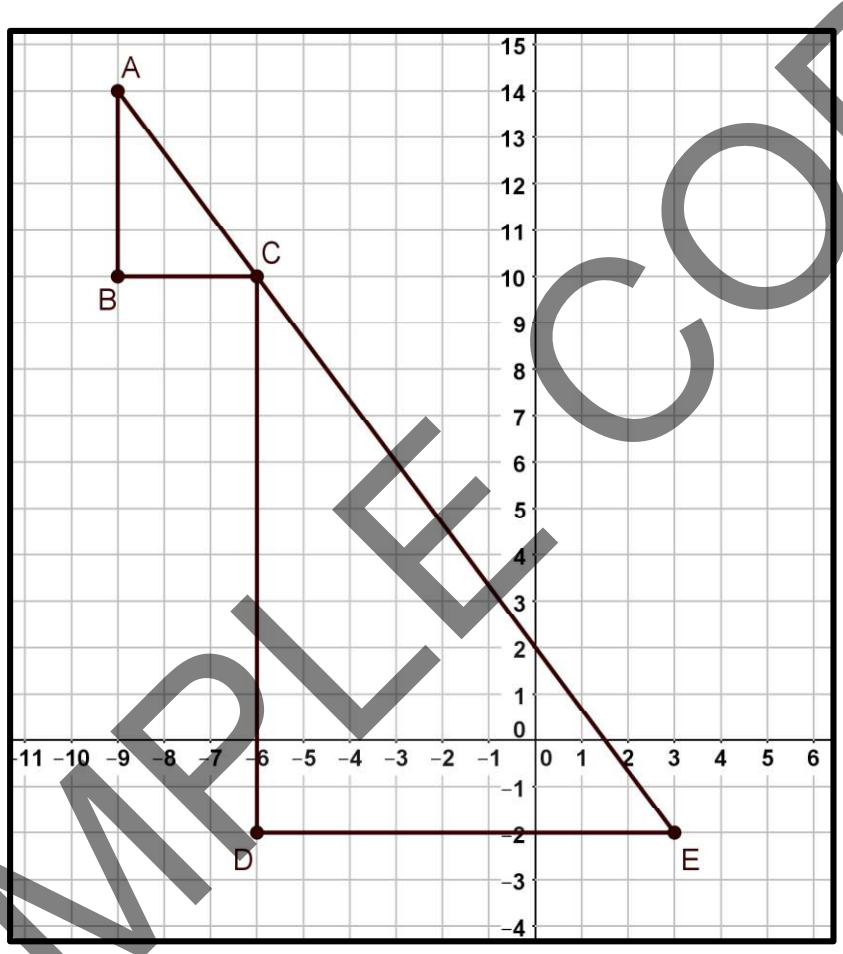
D Badwater Basin, Furnace Creek, New Ryan, Hog Ranch Mountain

Spiral 4

1 (8.4A)

Triangles ABC and CDE are similar right triangles.

DCE



Which proportion can be used to show that the slope of $\overline{AC}$ is equal to the slope of $\overline{CE}$?

F $\dfrac{-2-10}{-6-3}=\dfrac{10-14}{-9-(-6)}$

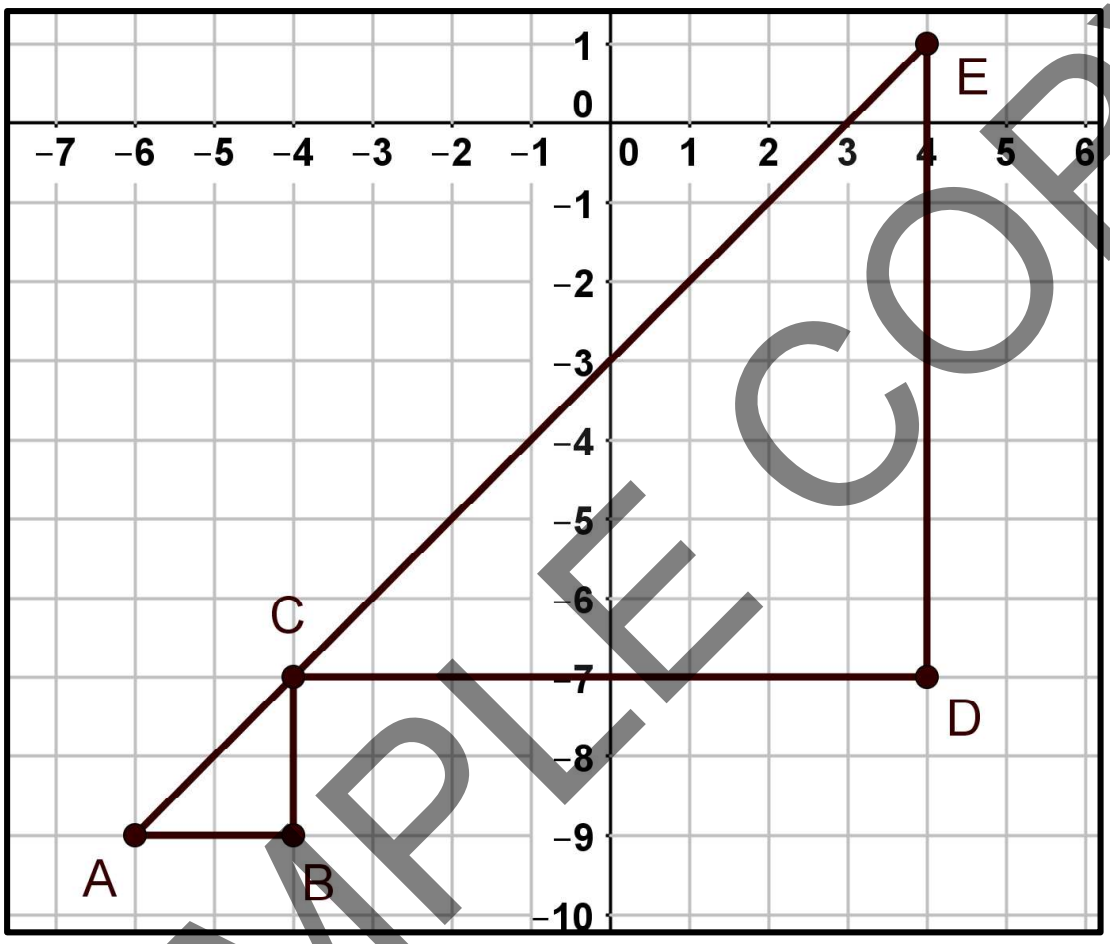
G $\dfrac{3-(-6)}{-2-10}=\dfrac{-6-(-9)}{10-14}$

H $\dfrac{-2-10}{3-(-6)}=\dfrac{10-14}{-6-(-9)}$

J $\dfrac{-2-10}{3-(-6)}=\dfrac{-6-(-9)}{10-14}$

2 (8.4A)

Triangles ABC and CDE are similar right triangles.



Which proportion can be used to show that the slope of $\overline{AC}$ is equal to the slope of $\overline{CE}$?

A $\dfrac{-9-(-9)}{-4-4}=\dfrac{-7-1}{-6-(-4)}$

B $\dfrac{-9-(-7)}{-6-(-4)}=\dfrac{-7-1}{-4-4}$

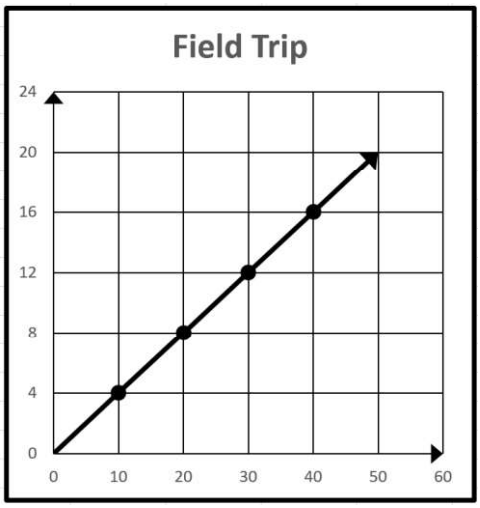
C $\dfrac{-9-9}{-6-4}=\dfrac{-7-1}{-4-4}$

D $\dfrac{-6-(-4)}{-9-(-9)}=\dfrac{-7-1}{-4-4}$

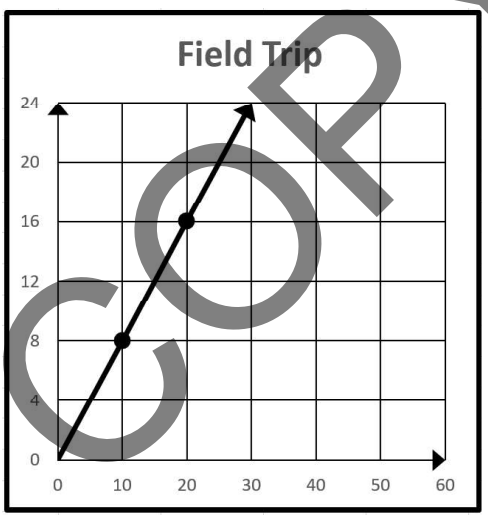
3 (8.4B)

A field trip to the water park requires 2 adults for every 5 students. Which graph models a relationship with the same unit rate?

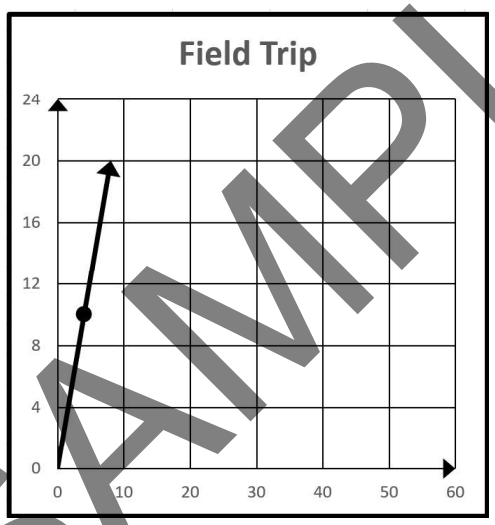
F



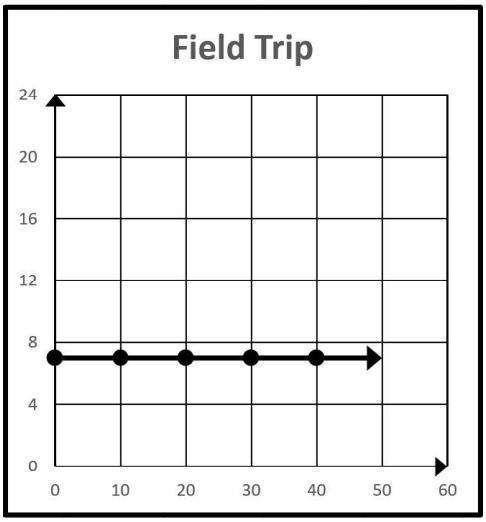
G



H



J

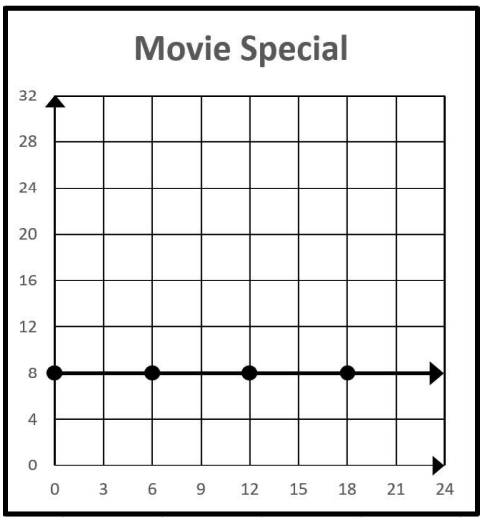


Spiral 5

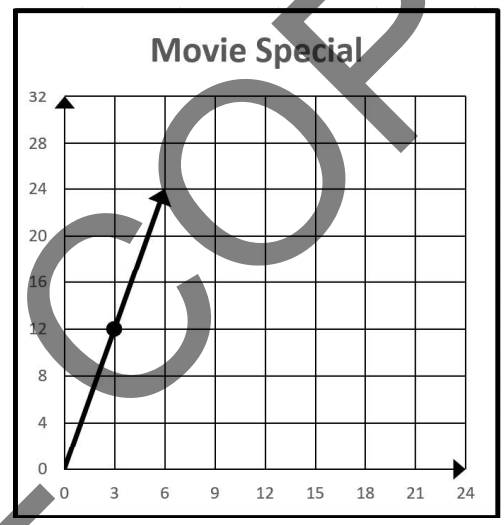
1 (8.4B)

A theater offered a special rate. For $8 moviegoers can purchase 3 tickets. Which graph models a relationship with the same unit rate to show the cost per number of tickets purchased?

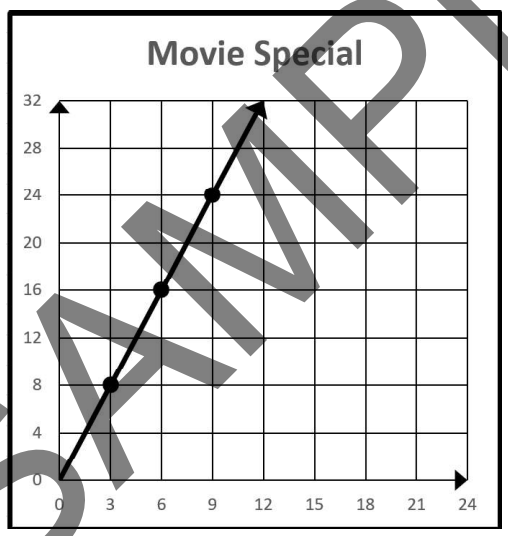
A



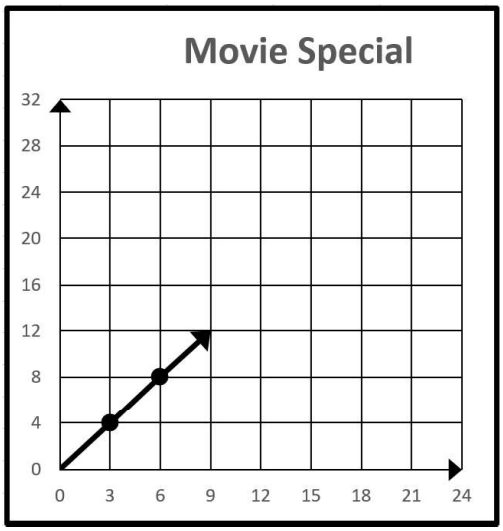
B



C



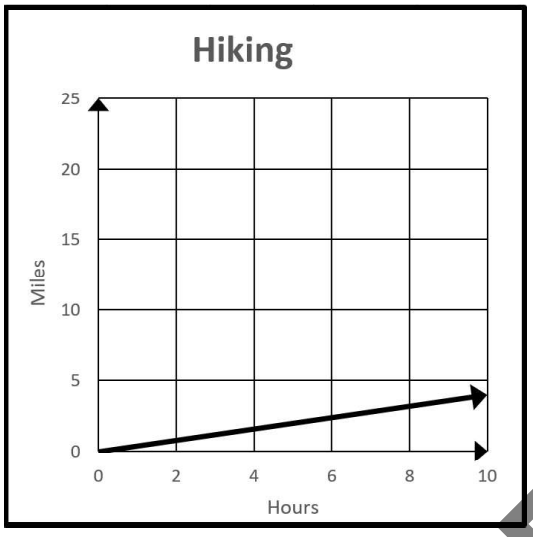
D



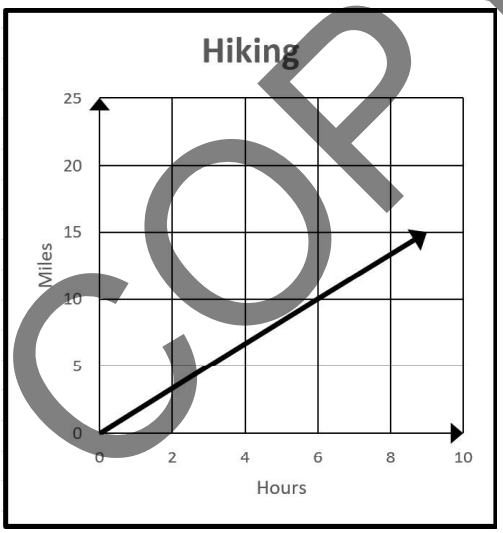
2 (8.4B)

A hiker covered 5 miles of trail every 2 hours. If she continues to hike at the same rate, which graph best represents her hiking speed in miles per hour?

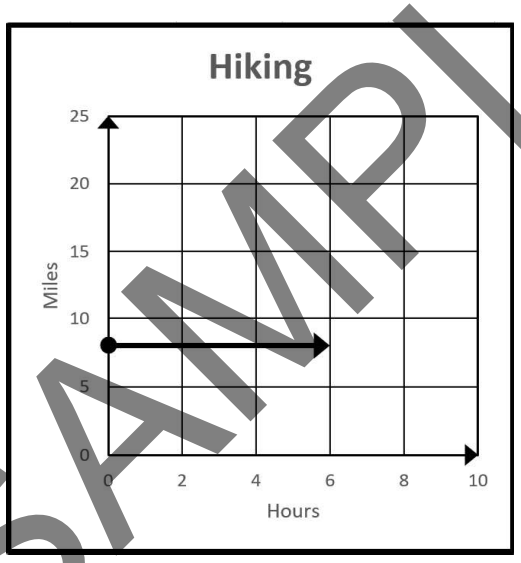
F



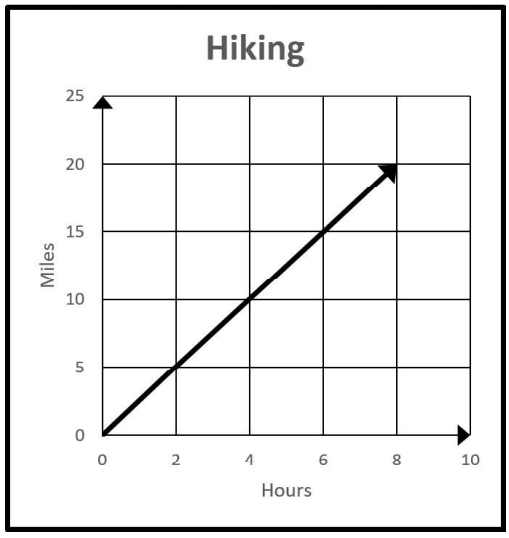
G



H

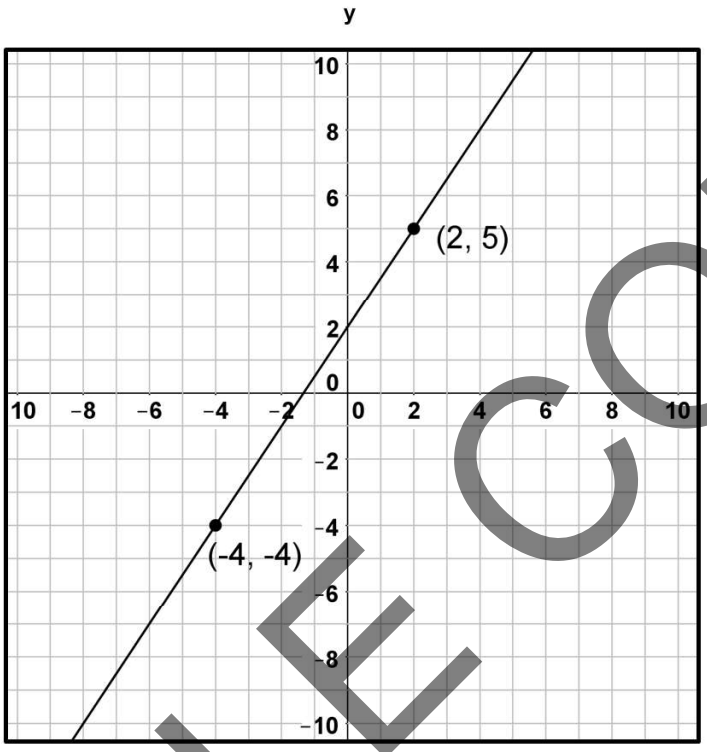


J



3 (8.4C)

The graph of a linear function is shown on the coordinate grid.



What is the rate of change for the function?

A 2

B $\frac{2}{3}$

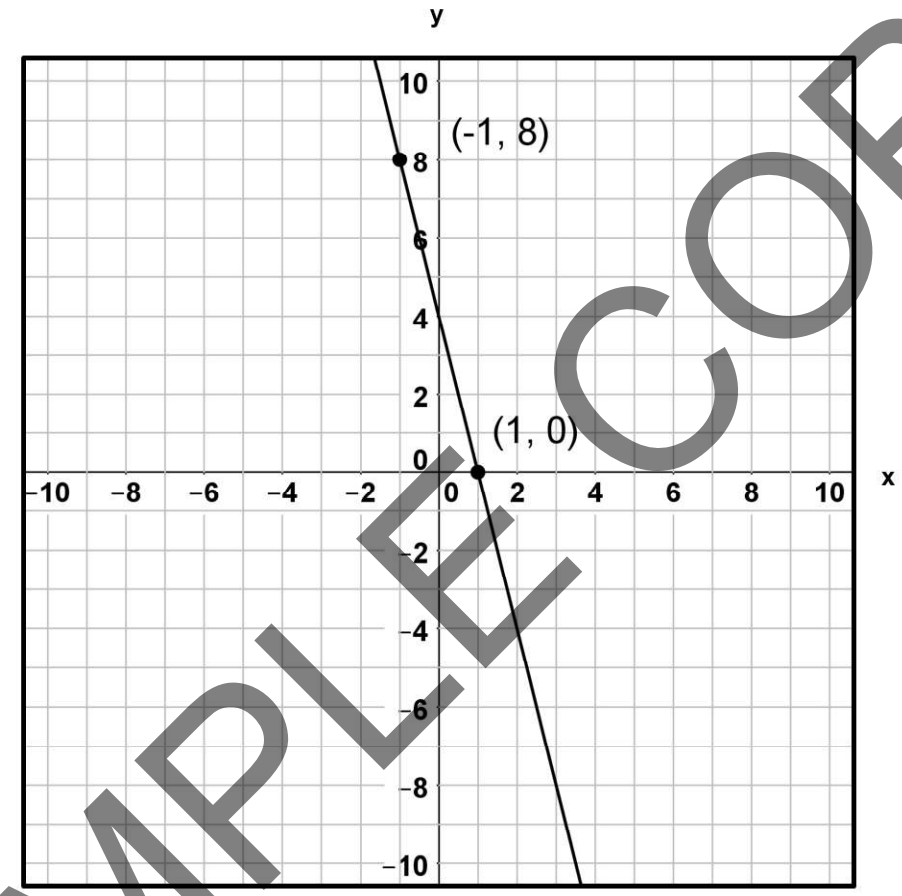
C $\frac{3}{2}$

D $-\frac{3}{2}$

Spiral 6

1 (8.4C)

The graph of a linear function is shown on the coordinate grid.



What is the y-intercept of this function?

F –4

G 1

H 4

J $\frac{1}{4}$

2 (8.2D)

Which list shows the numbers below in order from least to greatest?

$$\frac{3}{25},\ 12.4\%,\ 0.13,\ \frac{1}{8}$$

A $\frac{3}{25},\ 12.4\%,\ \frac{1}{8},\ 0.13$

B $\frac{1}{8},\ 0.13,\ 12.4\%,\ \frac{3}{25}$

C $0.13,\ \frac{1}{8},\ 12.4\%,\ \frac{3}{25}$

D $\frac{3}{25},\ 0.13,\ 12.4\%,\ \frac{1}{8}$

3 (8.2D)

Which list shows the numbers below in order from greatest to least?

$$\frac{3}{8},\ \frac{19}{50},\ \frac{9}{25},\ \frac{2}{5}$$

F $\frac{2}{5},\ \frac{3}{8},\ \frac{19}{50},\ \frac{9}{25}$

G $\frac{2}{5},\ \frac{19}{50},\ \frac{3}{8},\ \frac{9}{25}$

H $\frac{2}{5},\ \frac{3}{8},\ \frac{9}{25},\ \frac{19}{50}$

J $\frac{9}{25},\ \frac{3}{8},\ \frac{19}{50},\ \frac{2}{5}$

Spiral 7

1 (8.2D)

A teacher takes a grade based on the number of questions a student completed correctly out of the number of questions the student completed.

	Number Correct/Number Completed
Student 1	0.7
Student 2	72%
Student 3	$\frac{3}{4}$
Student 4	$\frac{29}{40}$

Which list shows student grades in order from greatest to least?

A Student 1, Student 2, Student 4, Student 3

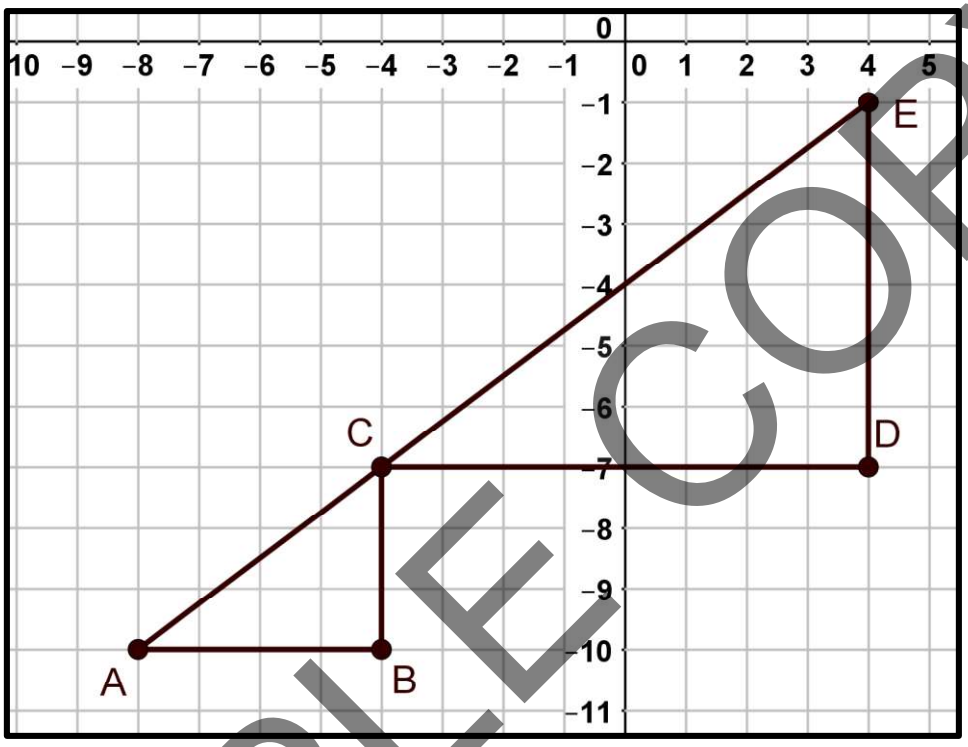
B Student 1, Student 3, Student 4, Student 2

C Student 2, Student 1, Student 4, Student 3

D Student 3, Student 4, Student 2, Student 1

2 (8.4A)

Triangles ABC and CDE are similar right triangles.



Which proportion can be used to show that the slope of $\overline{AC}$ is equal to the slope of $\overline{CE}$?

F $\dfrac{-1-(-7)}{4-(-4)} = \dfrac{-7-(-10)}{-4-(-8)}$

G $\dfrac{-1-(-7)}{4-(-4)} = \dfrac{-7-(-10)}{-8-(-4)}$

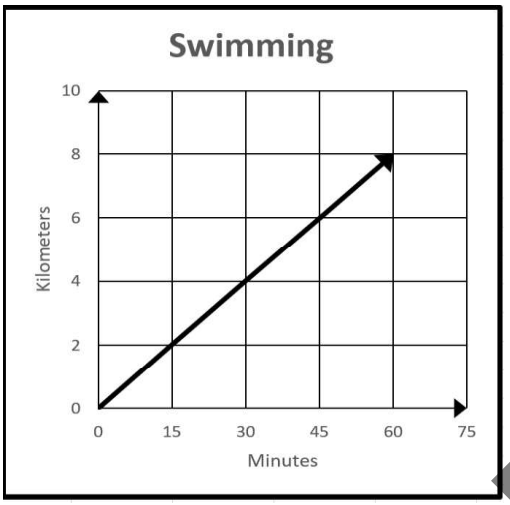
H $\dfrac{-1-(-7)}{4-(-4)} = \dfrac{-4-(-8)}{-7-(-10)}$

J $\dfrac{4-(-4)}{-1-(-7)} = \dfrac{-4-(-8)}{-7-(-10)}$

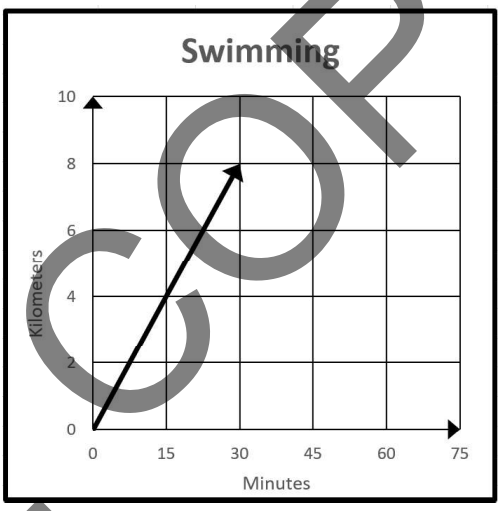
3 (8.4B)

A swimmer swims 2 kilometers every 15 minutes. If he continues to swim at the same rate, which graph best represents his swimming speed in kilometers per minute?

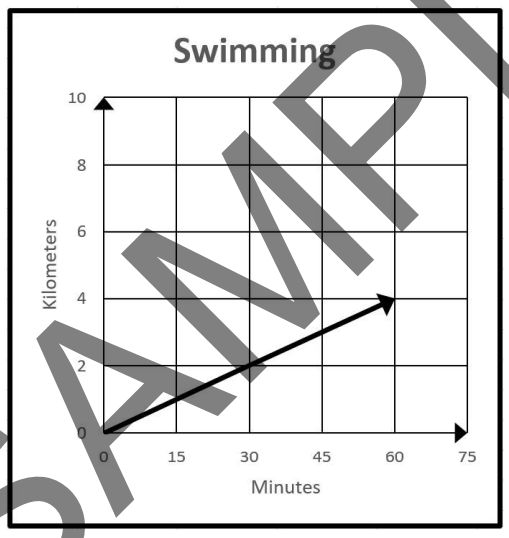
A



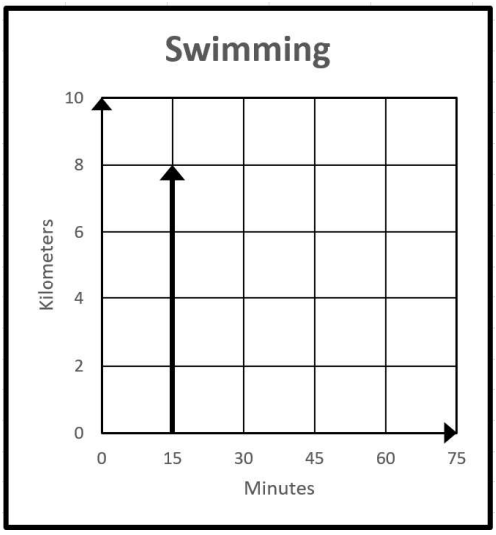
B



C

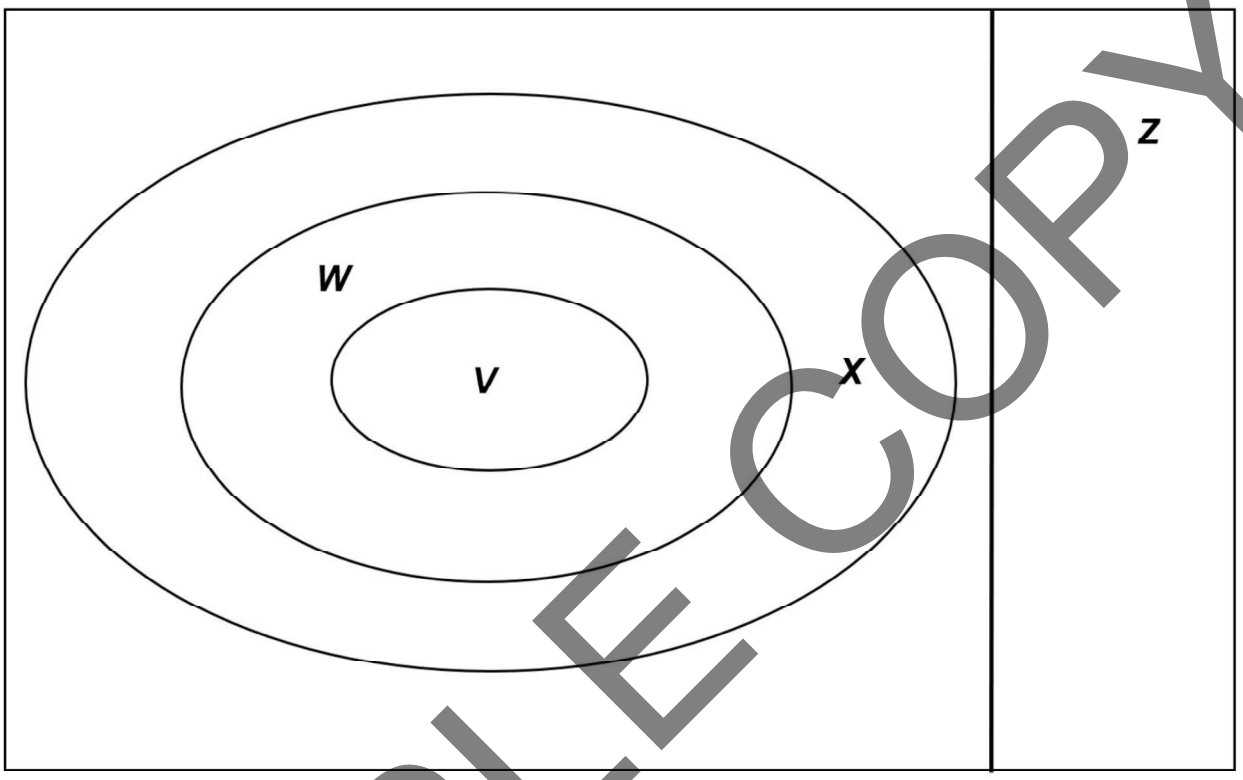


D



Spiral 8

1 (8.2A)



The diagram shows the relationship between whole numbers, rational numbers, irrational numbers, and integers. Which space should be labeled *Integers*?

F *W*

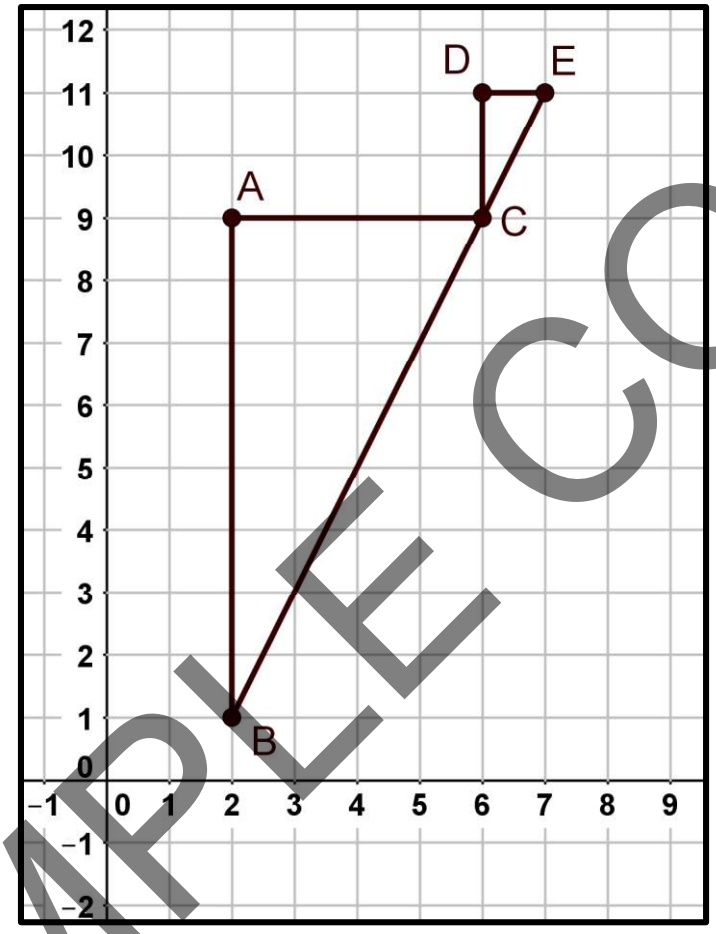
G *X*

H *V*

J *Z*

2 (8.4A)

Triangles ABC and DCE are similar right triangles.



Which proportion can be used to show that the slope of $\overline{BC}$ is equal to the slope of $\overline{CE}$?

A $\frac{1-9}{2-6}=\frac{7-6}{11-9}$

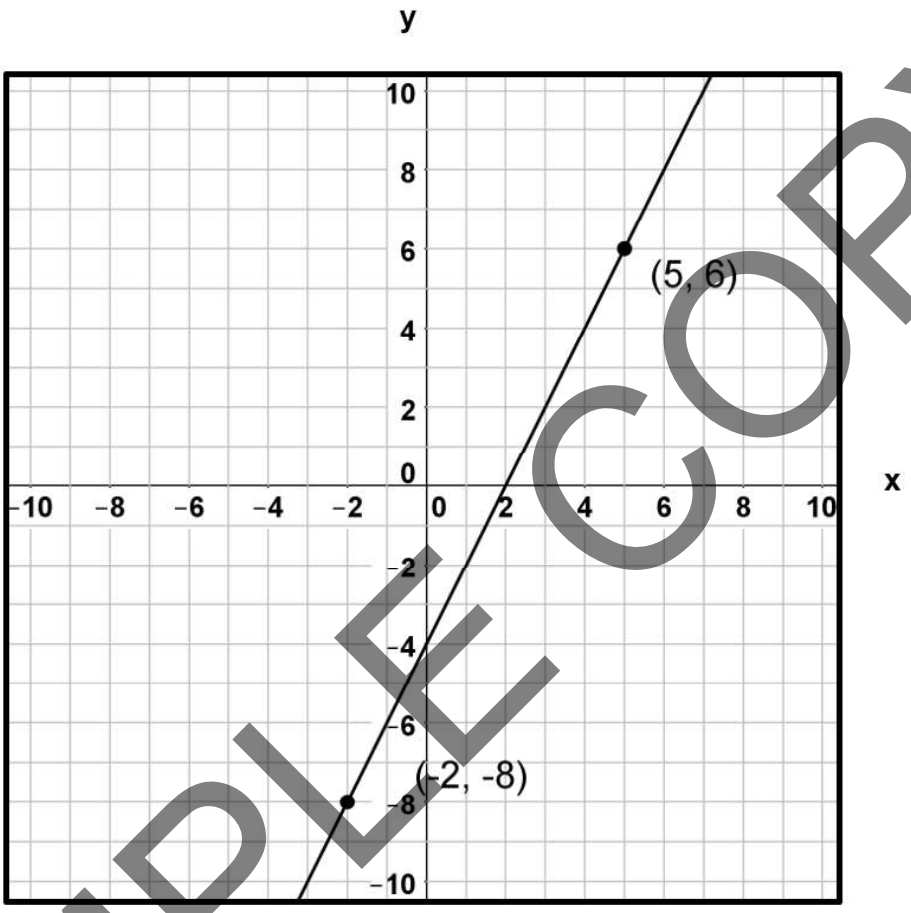
B $\frac{1-9}{2-6}=\frac{9-11}{6-7}$

C $\frac{2-6}{1-9}=\frac{6-7}{9-11}$

D $\frac{1-9}{6-7}=\frac{9-11}{2-6}$

3 (8.4C)

The graph of a linear function is shown on the coordinate grid.



What is the slope and y-intercept for the function?

F slope = 2; y-intercept = 2

G slope = –4; y-intercept = 2

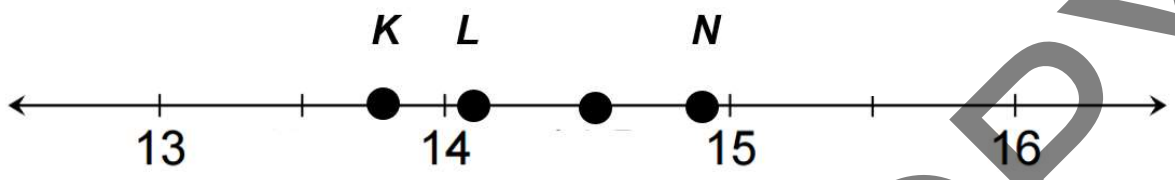
H slope = 2; y-intercept = –4

J slope = $\frac{1}{2}$; y-intercept = –4

Spiral 9

1 (8.2B)

Which point on the number line best represents the location of $\sqrt{199}$?



A Point *K*

B Point *L*

C Point *M*

D Point *N*

2 (8.4C)

The table shows the input and output for a linear function.

x	y
-4	12
-2	8
0	4
2	0
4	-4

What is the rate of change for the function?

F 2

G $\frac{1}{2}$

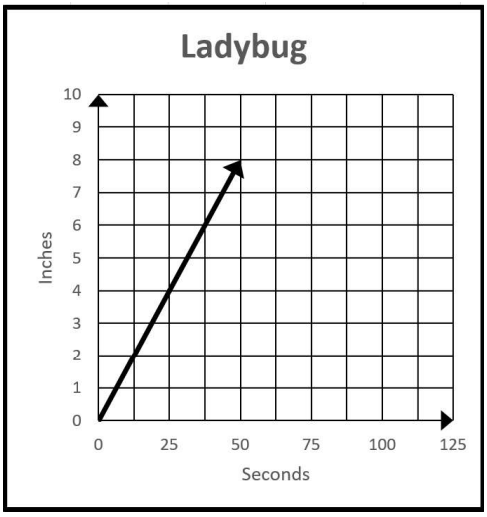
H 4

J –2

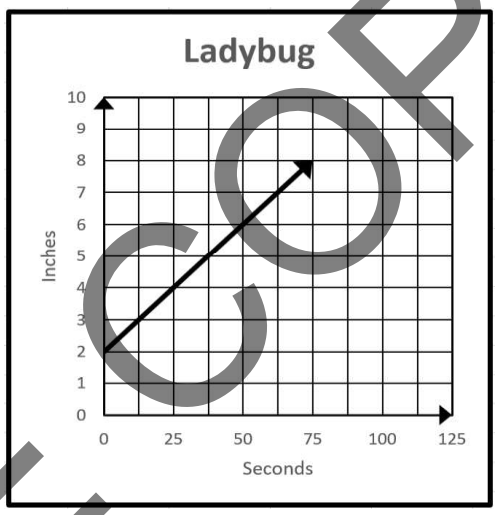
3 (8.4B)

A ladybug crawls across the sidewalk at a rate of 2 inches every 25 seconds. If the bug continues to crawl at the same rate, which graph best represents its speed in inches per second?

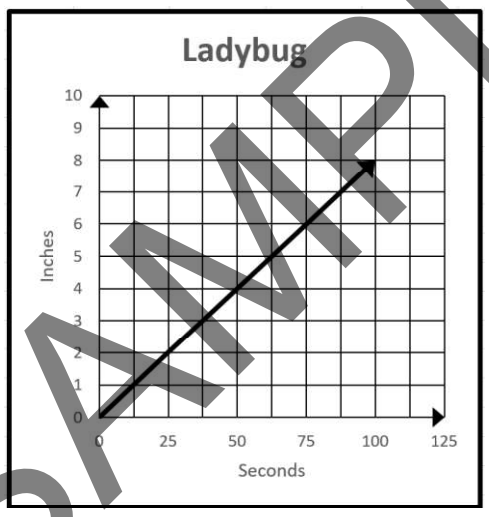
A



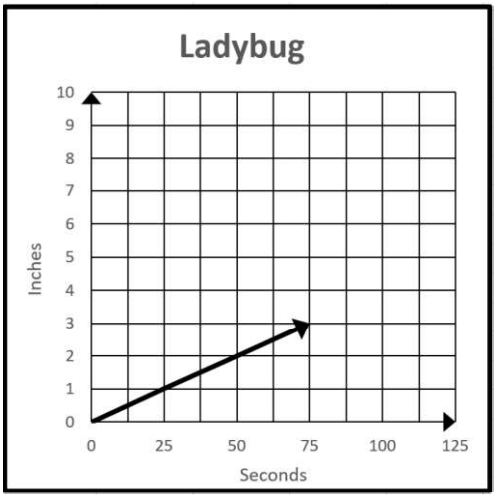
B



C



D



SpiralEd Solutions

Spiral 10

1 (8.2C)

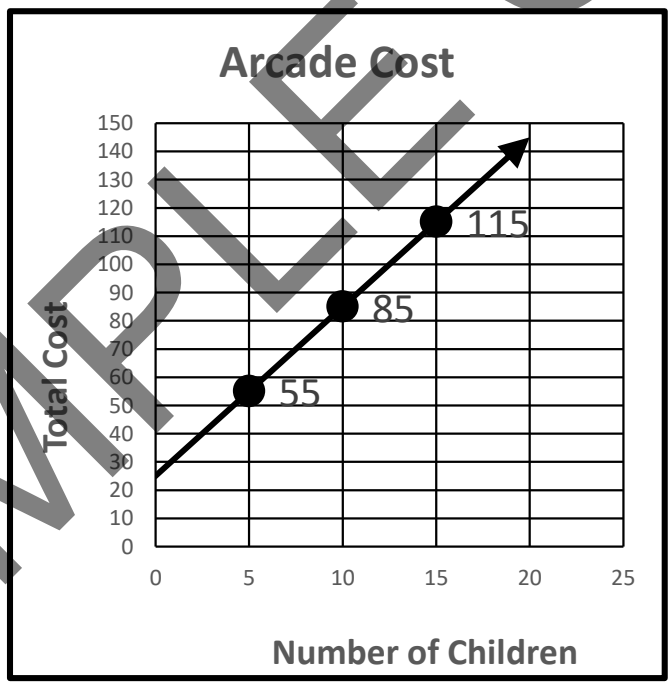
In her report on Alaska, Kaja noted that the State of Alaska has an area of 663,300 square miles. How is this number written in scientific notation?

F 6.633×10^{5} **G** 6.633×10^{-5}

H 66.33×10^{4} **J** 6.633×10^{6}

2 (8.4C)

The total cost for holding a birthday party at an arcade includes a cost per child and a flat rate for cleaning. The graph models the function, where *x* represents the number of children attending the party.



What is the rate of change for this function?

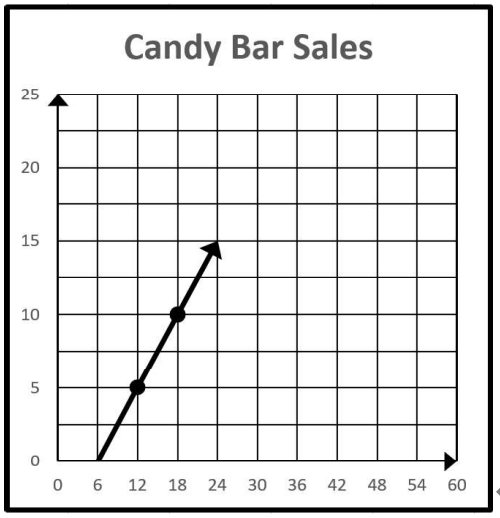
A 25 **B** 30

C 5 **D** 6

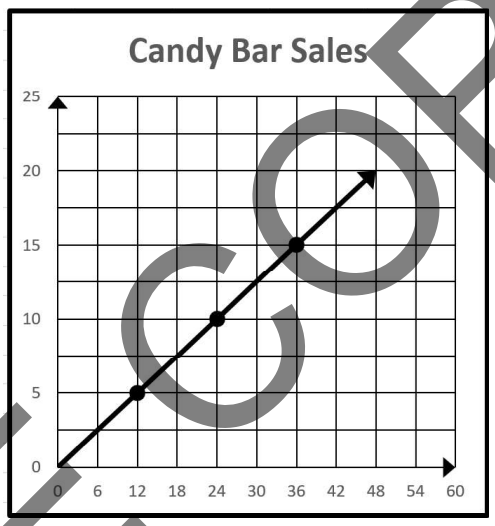
3 (8.4B)

The school band earns $5 for every dozen candy bars sold. Which graph models a relationship with the same unit rate showing earnings per number of bars sold?

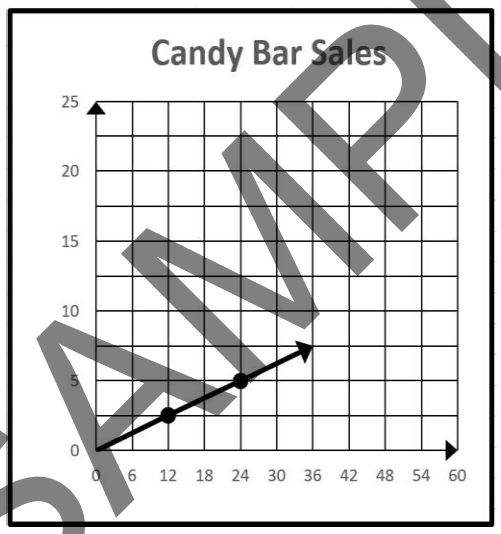
F



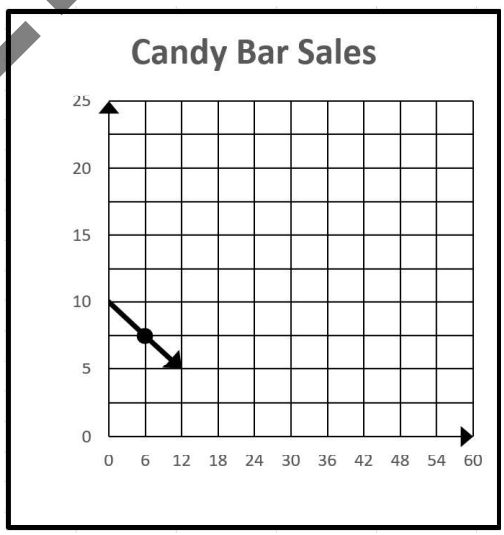
G



H



J



Spiral 11

1 (8.2D)

A student surveys his friends to determine how much of their weekly allowance they spend on snacks.

	Allowance Spent on Snacks
Student 1	0.75
Student 2	72%
Student 3	$\frac{3}{5}$
Student 4	$\frac{2}{3}$

Which list shows student spending in order from greatest to least?

A Student 1, Student 2, Student 4, Student 3

B Student 1, Student 3, Student 4, Student 2

C Student 2, Student 1, Student 4, Student 3

D Student 3, Student 4, Student 2, Student 1

2 (8.4C)

The table shows the input and output for a linear function.

x	-4	-2	0	2	4
y	4	3	2	1	0

What is the slope and y-intercept for the function?

F slope = $\frac{1}{2}$; y-intercept = 2

G slope = –4; y-intercept = 2

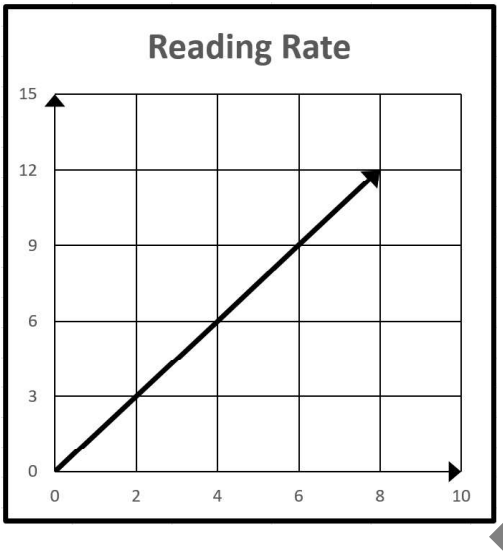
H slope = 2; y-intercept = –4

J slope = $-\frac{1}{2}$; y-intercept = 2

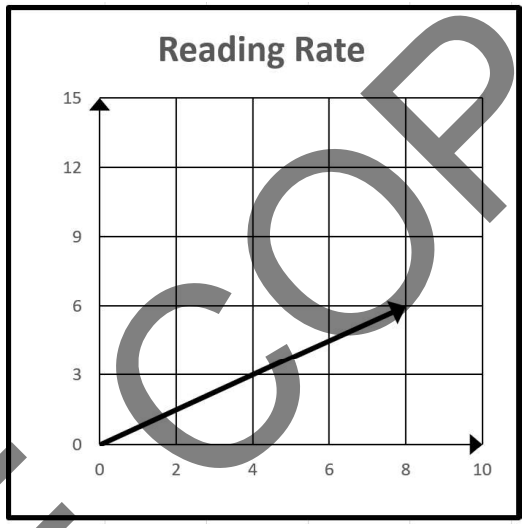
3 (8.4B)

A fourth grader reads 3 pages every 2 minutes. Which graph models a relationship with the same unit rate, showing pages read per minute?

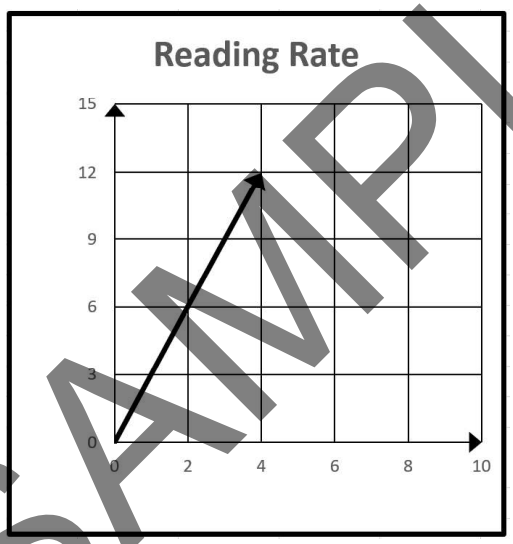
A



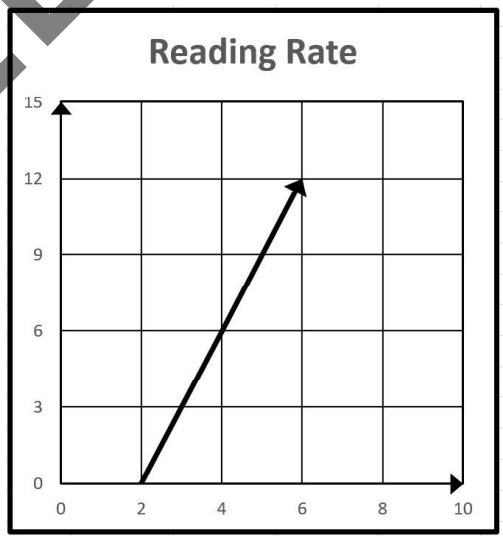
B



C



D



SpiralEd Solutions

Spiral 12

1 (8.4C)

The table shows the input and output for a linear function.

x	y
-4	-6
-2	-5
0	-4
2	-3
4	-2

What is the slope of the function?

F 2

G $\frac{1}{2}$

H 4

J –2

2 (8.5A)

Which equation represents a function contains only corresponding x-values and y-values where the value of y is the sum of x and 5?

A $x = \frac{5}{y}$

B $y = x + 5$.

C $y = \frac{1}{5}x$

D $y = x + 5$

3 (8.4C)

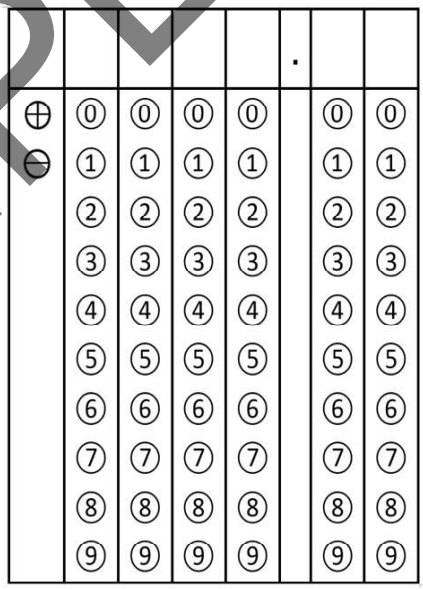
The cost of a camping permit includes a flat rate for the permit plus a standard fee for each night of camping. The table shows the total cost for a permit for x nights of camping.

Camping Fees

Number of nights, x	1	3	6	8
Total cost, y	$35	$65	$110	$140

What is the rate of change for this function?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



SpiralEd Solutions

Spiral 13

1 (8.5A)

Which table contains only corresponding x-values and y-values where the value of y is the product of 3 and x?

A

x	y
8	11
13	16
18	21
23	26

B

x	y
8	5
13	10
18	15
23	20

C

x	y
8	24
13	39
18	54
23	69

D

x	y
8	2.7
13	4.3
18	6
23	7.7

2 (8.5B)

Which equation represents a function that contains only corresponding x-values and y-values where the value of y is three less than the quotient of x and 5?

F $x = \frac{5}{y} - 3$

G $y = 3x + 5$.

H $y = \frac{1}{5}x - 3$

J $y = x + 5$

3 (8.5B)

Which equation represents a function that contains only corresponding x-values and y-values where the value of y is 0.2 more than the product of 0.4 and x?

A $y = \frac{x}{0.4} + 2$

B $y = 0.2x + 0.4$

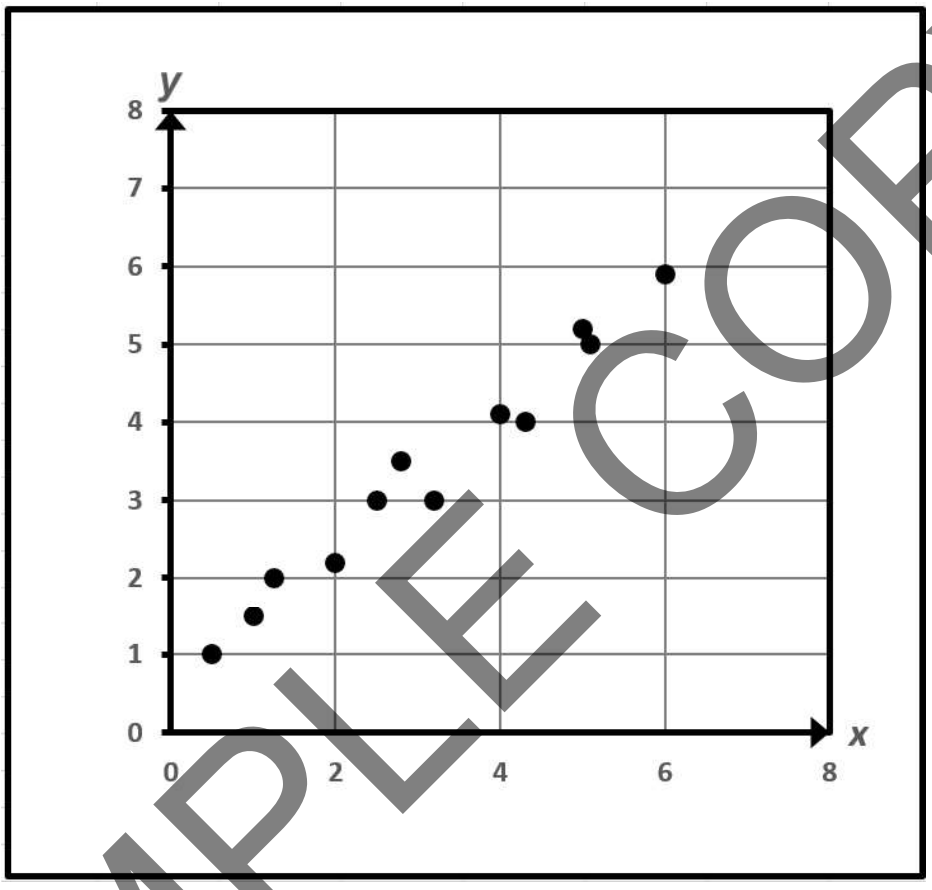
C $y = 0.4x + 0.2$

D $0.2y = x + 0.4$

Spiral 14

1 (8.5C)

Which statement about the scatterplot is correct?



F The scatterplot suggests a linear relationship between x and y.

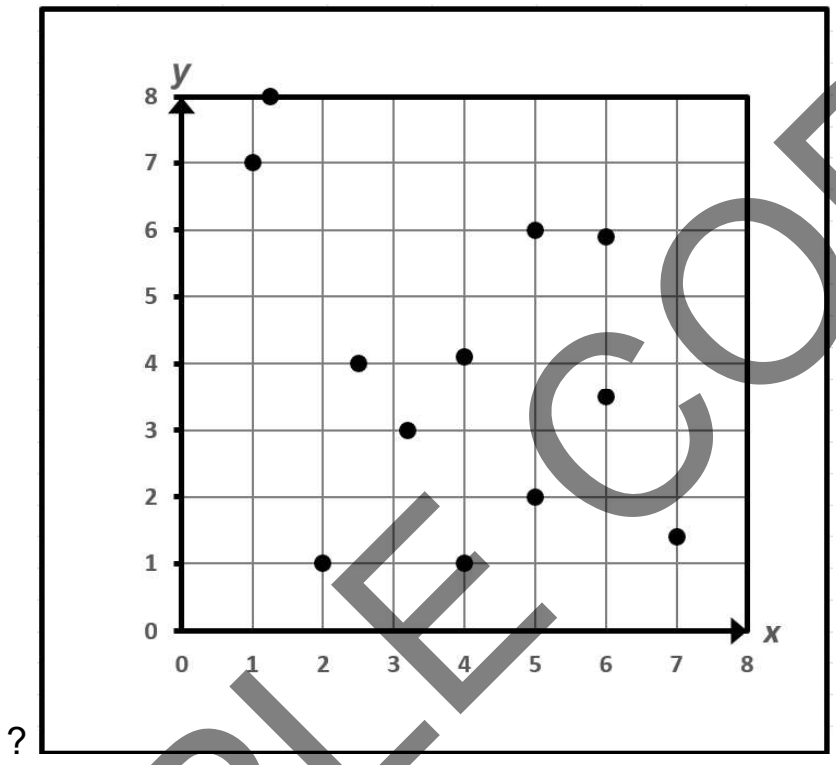
G The scatterplot does not suggest a linear relationship between x and y.

H No conclusion can be drawn about relationship between x and y based on the scatterplot.

J The scatterplot suggests a non-linear relationship between x and y.

2 (8.5C)

Which statement about the scatterplot is correct?



?

A The scatterplot suggests a linear relationship between x and y.

B The scatterplot does not suggest a linear relationship between x and y.

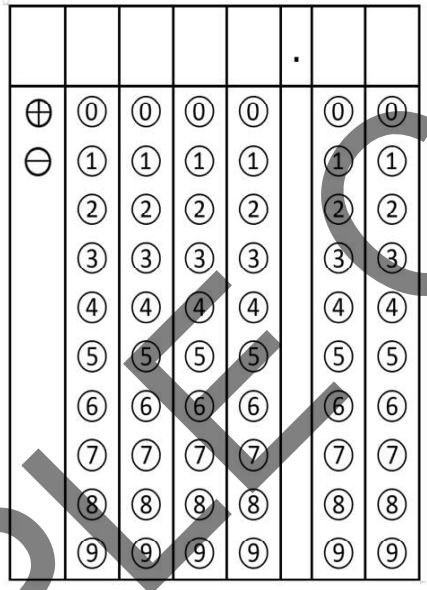
C The scatterplot suggests that as x increases, y decreases.

D The scatterplot suggests a negative relationship between x and y.

3 (8.5E)

The value of y varies directly with x. When $y = 15, x = 3$. What is the value of y when $x = \frac{1}{2}$?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



Spiral 15

1 (8.5G)

Which statement describes the table?

x	y
-3	2
-1	4
1	6
-1	8
-3	10

A The table represents *y* as a function of *x*, because each *y*-value corresponds to exactly one *x*-value.

B The table does not represent *y* as a function of *x*, because two of the *x*-values correspond to the same *y*-value.

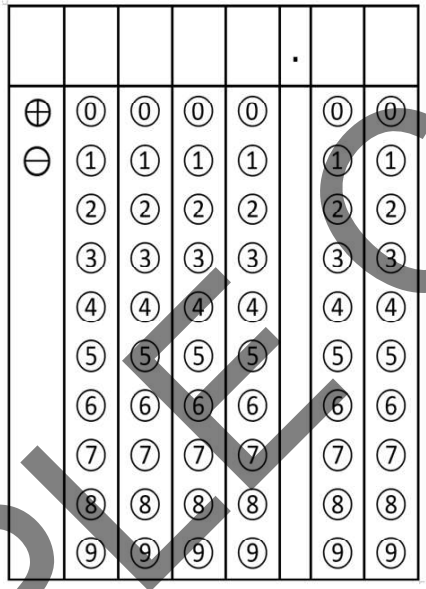
C The table represents *y* as a function of *x*, because each *x*-value corresponds to exactly one *y*-value.

D The table does not represent *y* as a function of *x*, because two of the *y*-values correspond to the same *x*-value.

2 (8.5E)

The value of y varies directly with x. When $y = \frac{5}{8}, x = \frac{1}{2}$. What is the value of y, when $x = 24$?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



3 (8.5G)

Which table does **not** represent y as a function of x?

A

x	y
-3	2
-1	4
1	6
3	8
5	10

B

x	y
-3	2
-1	4
-1	6
-3	8
-5	10

C

x	y
-3	4
-1	4
1	4
3	4
5	4

D

x	y
-3	-1
-1	-2
1	-3
3	-1
5	-2

SpiralEd Solutions

Spiral 16

1 (8.5G)

Which table does **not** represent y as a function of x?

F

x	y
-3	2
-1	4
1	6
3	8
5	10

G

x	y
-3	2
-1	4
1	6
3	8
5	10

H

x	y
-3	8
-1	5
1	3
3	7
5	10

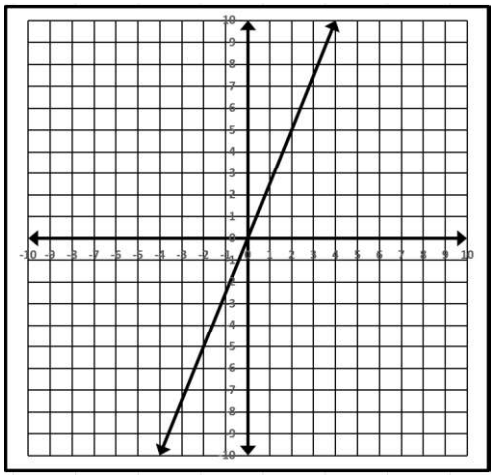
J

x	y
-3	-1
-1	-2
1	-3
-3	-4
5	-5

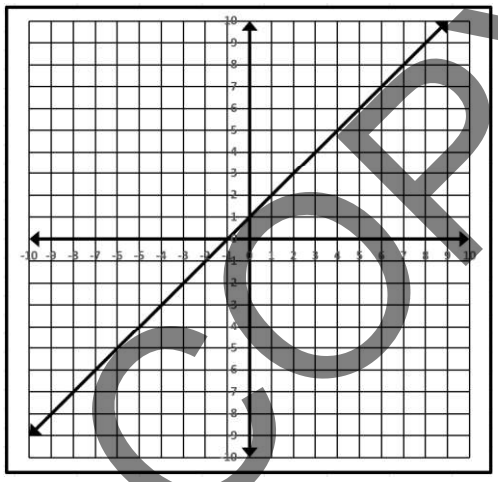
2 (8.5F)

Which graph shows a proportional relationship between x and y?

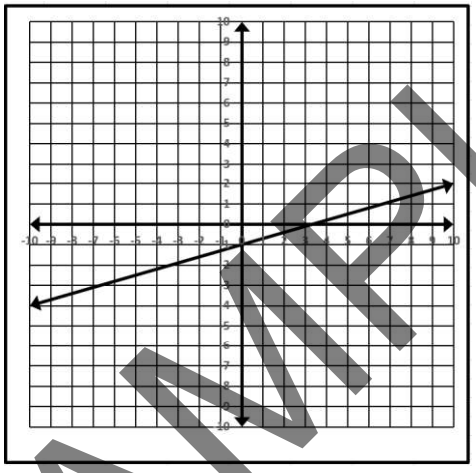
A



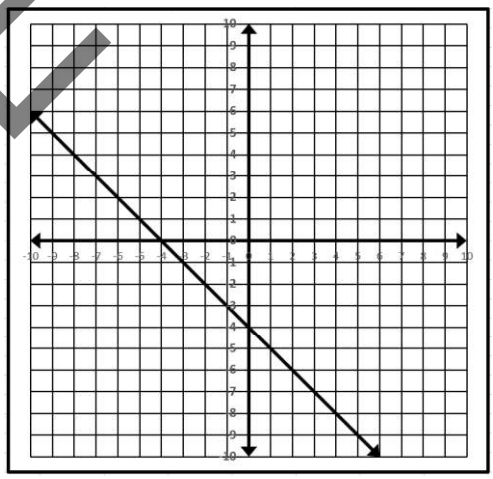
B



C



D



3 (8.5G)

Which set(s) of ordered pairs represent y as a function of x?

I {(3,2), (-3,-2), (4,5), (-4,-5), (0,8)}

II {(3,2), (3,-2), (4,5), (4,-5), (0,8)}

III {(2,5), (-3,-5), (4,5), (8,-5), (0,8)}

IV {(3,2), (-3,-2), (4,5), (4,-5), (3,8)}

F I, II, III, IV

G none

H I and III only

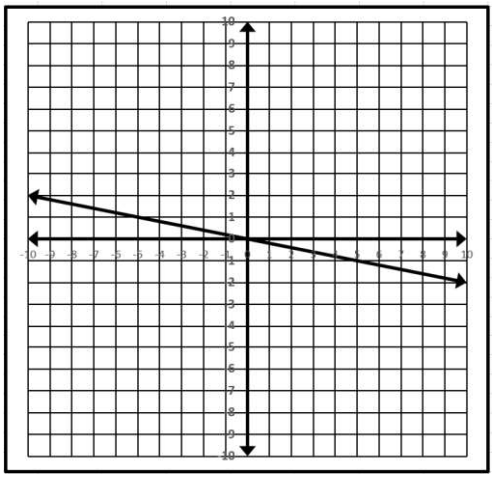
J I, II, and IV

Spiral 17

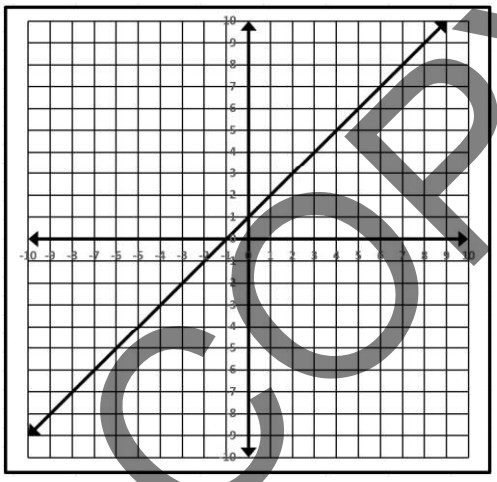
1 (8.5F)

Which graph shows a proportional relationship between x and y?

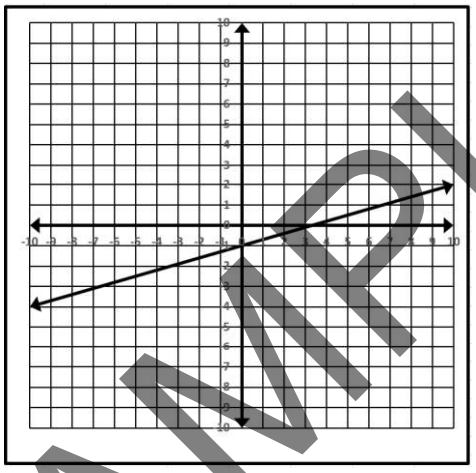
A



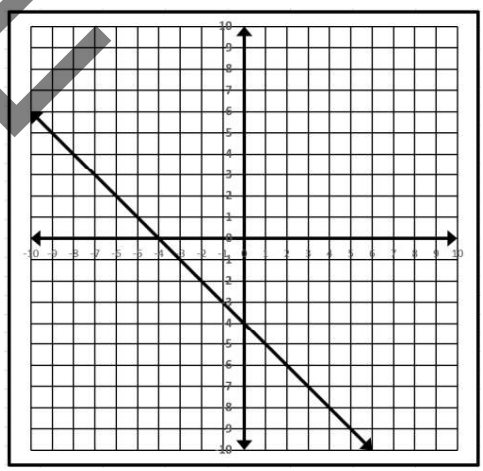
B



C



D



2 (8.5H)

Which situation represents a proportional relationship?

F The cost of renting a meeting room for $38 per hour.

G The cost of renting a meeting hall for $25 per hour with a $75 cleaning fee.

H The cost of renting a meeting hall for a flat fee of $200.

J The cost of renting a meeting hall for a non-refundable deposit of $100 plus $30 per hour.

3 (8.5H)

Which statement is true?

A The cost of buying pizza at $2.75 per slice is proportional, because the function can be represented in the form $y = kx$.

B The cost of buying pizza at $2.75 per slice is not proportional, because the function cannot be represented in the form $y = kx$.

C The cost of buying pizza at $2.75 per slice is proportional, because the function can be represented in the form $y = mx + b$, where $b \neq 0$.

D The cost of buying pizza at $2.75 per slice is not proportional, because the function can be represented in the form $y = mx + b$, where $b \neq 0$.

Spiral 18

1 (8.5G)

Which table does **not** represent y as a function of x?

F

x	y
-3	2
-3	4
-3	6
-3	8
-3	10

G

x	y
-3	2
-1	4
1	6
3	8
5	10

H

x	y
-3	4
-1	4
1	4
3	4
5	4

J

x	y
-3	5
-1	6
1	7
3	8
5	9

2 (8.5I)

Which function is best represented by this table?

x	-3	0	2	5
y	9	3	-1	-7

A $y = -3x + 2$

B $y = -2x + 3$

C $y = 2x - 3$

D $y = 3x - 2$

3 (8.5I)

Which function is best represented by this table?

x	**y**
-3	-11
0	-2
1	1
5	13

F $y = -3x + 2$

G $y = -2x + 3$

H $y = 2x - 3$

J $y = 3x - 2$

SpiralEd Solutions

Spiral 19

1 (8.5G)

Which set(s) of ordered pairs represent y as a function of x?

I {(3,2), (-3,-2), (4,5), (-4,-5), (0,8)}

II {(3,2), (-3,-2), (4,6), (-4,-5), (0,6)}

III {(2,5), (-3,-5), (2,5), (8,-5), (0,8)}

IV {(3,2), (-3,-2), (4,5), (-4,-5), (5,8)}

A I, II, III, IV

B none

C I and III only

D I, II, and IV only

2 (8.5I)

Which function is best represented by this table?

x	-5	-3	0	3
y	-13	-9	-3	3

F $y = -3x + 2$

G $y = -2x + 3$

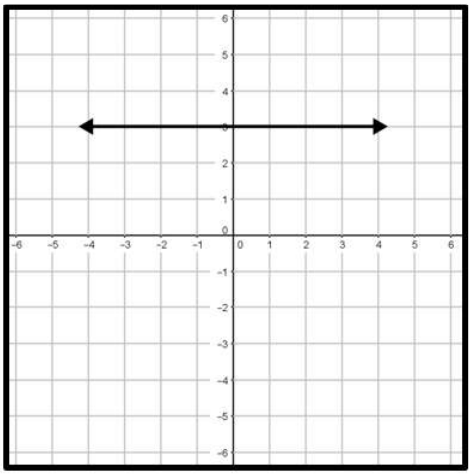
H $y = 2x - 3$

J $y = 3x - 2$

3 (8.5G)

Which represents y as a function of x?

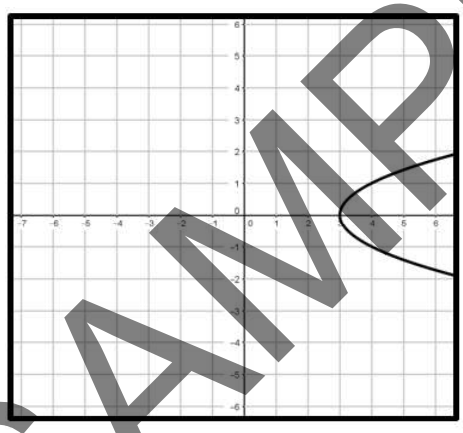
A



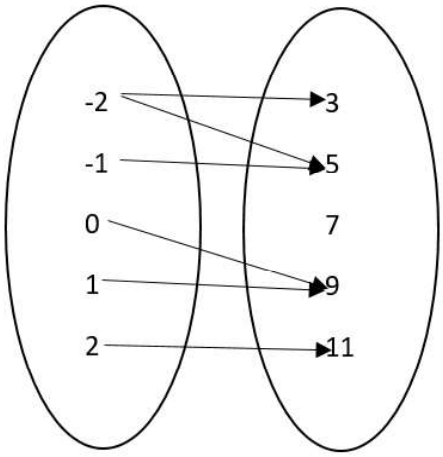
B

x	y
-3	2
-1	4
1	6
-1	8
-3	10

C



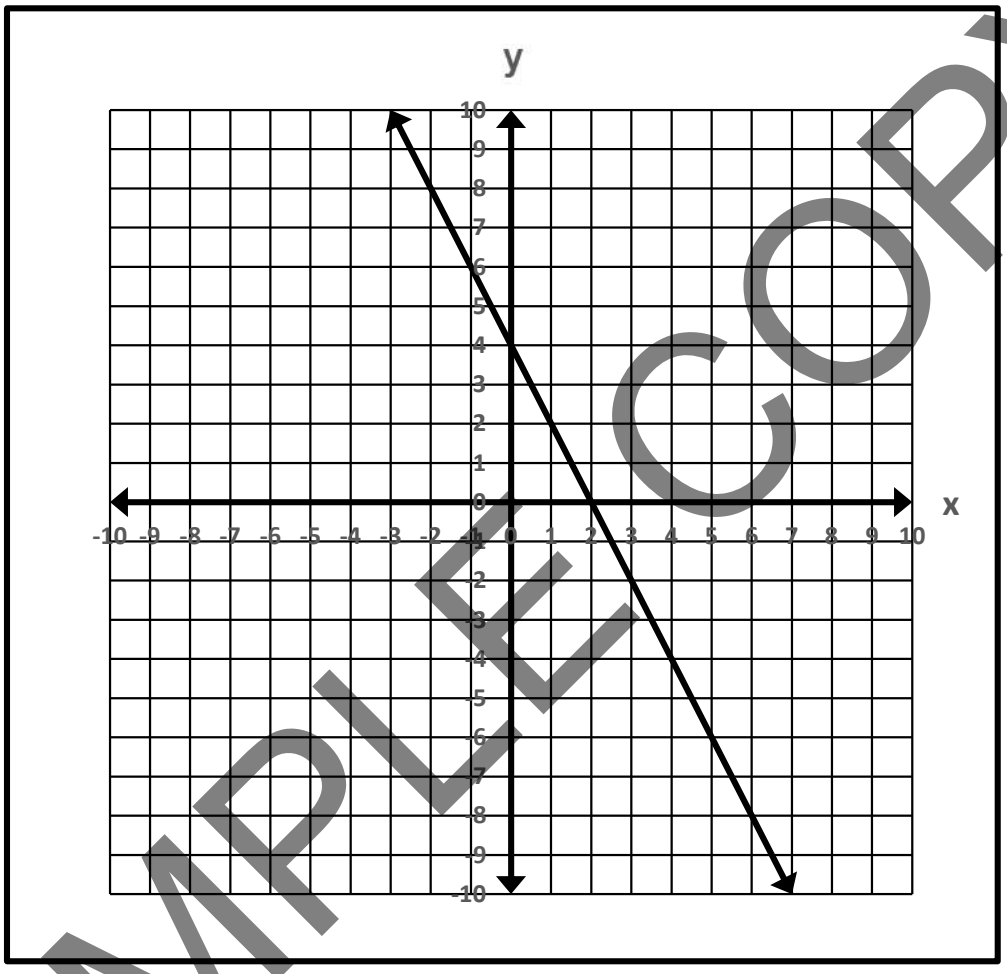
D



Spiral 20

1 (8.5I)

Which function is represented by the graph?



F $y = -4x + 2$

G $y = -2x + 2$

H $y = -2x + 4$

J $y = 2x - 4$

2 (8.5I)

The cost of renting a banquet hall requires a flat rate cleaning fee of $225 dollars and $75 dollars for each hour rented. Which equation represents the total cost of the rental (C) as a function of the number of hours rented (h)?

A $C = 75h + 225$

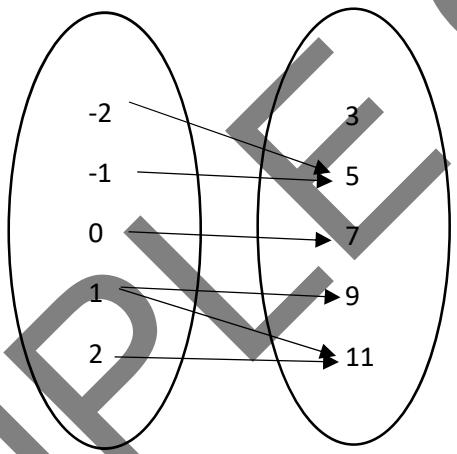
B $C = 225h + 75$

C $C = 225(h + 75)$

D $C = 75(h + 225)$

3 (8.5G)

Which statement describes the mapping?



F The mapping represents y as a function of x, because each y-value corresponds to exactly one x-value.

G The mapping does not represent y as a function of x, because two of the x-values correspond to the same y-value.

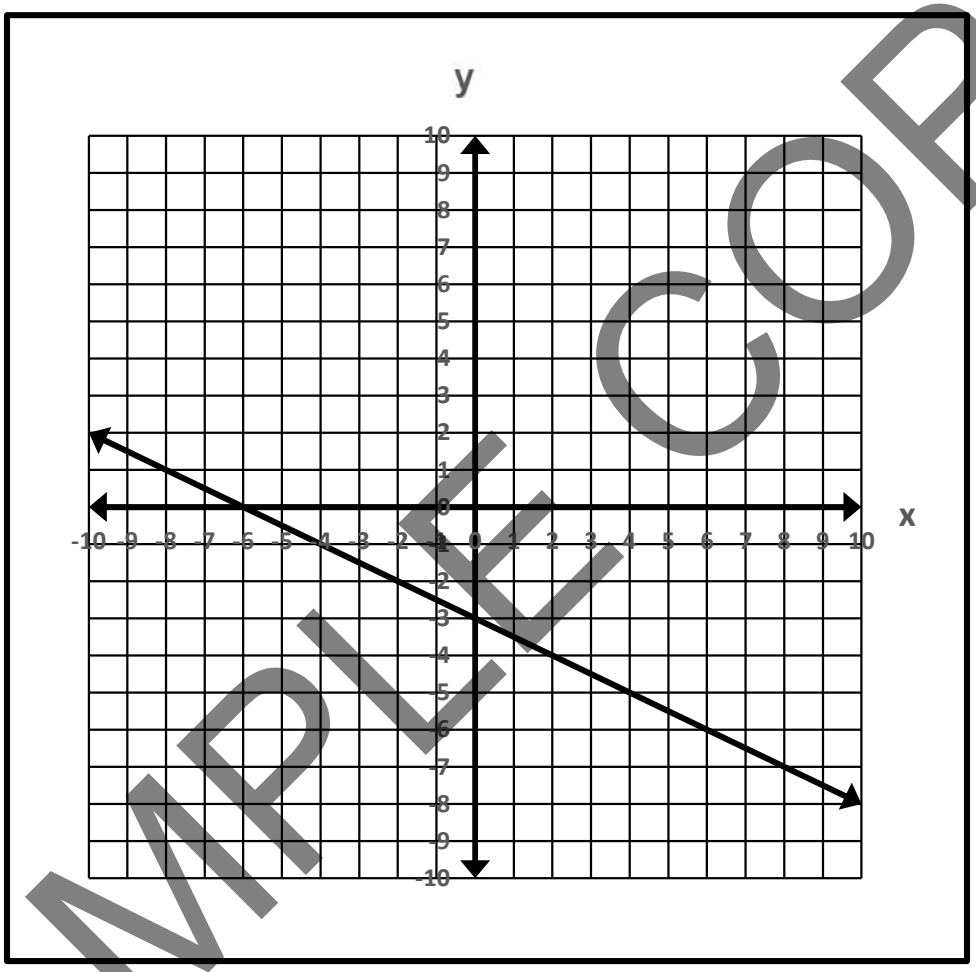
H The mapping represents y as a function of x, because each x-value corresponds to exactly one y-value.

J The mapping does not represent y as a function of x, because two of the y-values correspond to the same x-value.

Spiral 21

1 (8.5I)

Which function is represented by the graph?



A $y = -\frac{1}{2}x - 3$

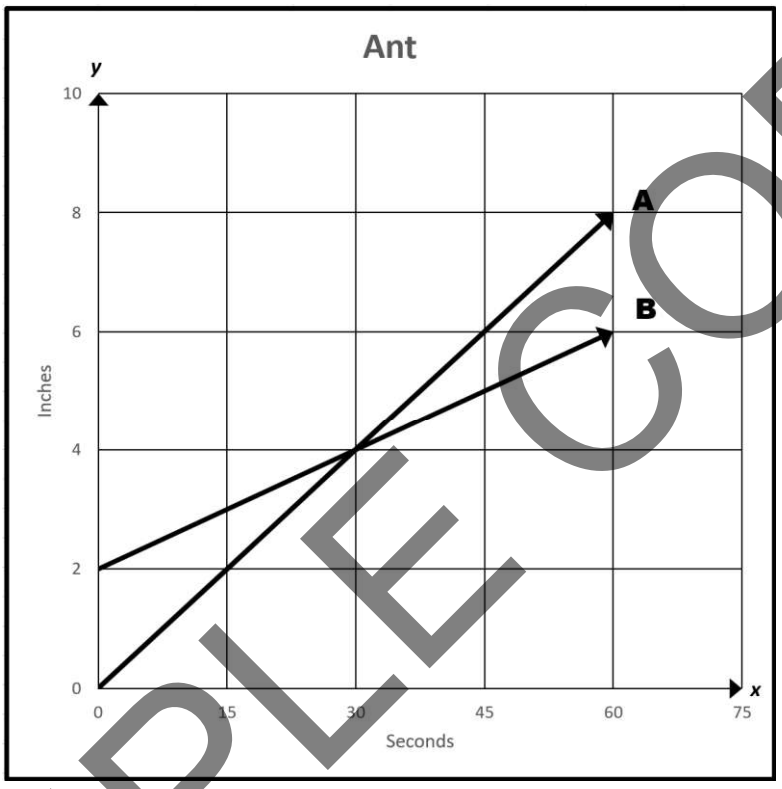
B $y = \frac{1}{2}x - 3$

C $y = \frac{1}{2}x + 3$

D $y = -\frac{1}{2}x + 3$

2 (8.9A)

The graph models the linear relationship between the amount of time passed in seconds and the position on the ground for two ants.



Based on the graph, which statement appears to be true?

F Both ants travelled to the 4-inch point in 30 seconds.

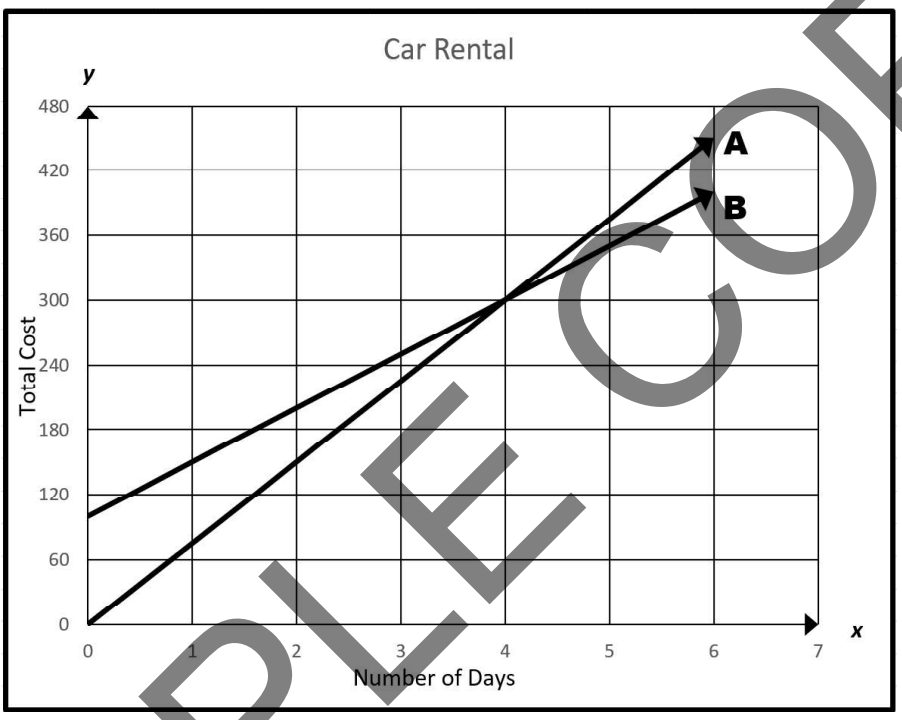
G At 30 seconds, Ant A was 2 inches ahead of Ant B.

H At 30 seconds, Ant B was 1 inch ahead of Ant A.

J Both ants travelled 30 inches in 4 seconds.

3 (8.9A)

The graph models the linear relationship between the number of days a car is rented and the total cost of the rental for two rental companies.



Based on the graph, which statement appears to be true?

A For 4 days the cost of renting from Company A is about $40 less than renting for Company B.

B For 1 day the cost of renting from Company A is about $100 more than renting from Company B.

C For 4 days the cost is $300 from both Company A and Company B.

D For 5 days the cost of renting from Company B is more than renting from Company A.

SpiralEd Solutions

Spiral 22

1 (8.5A)

Which equation represents a function that contains only corresponding x-values and y-values where the value of y is the product of 0.4 and x?

F $y = \frac{x}{0.4}$

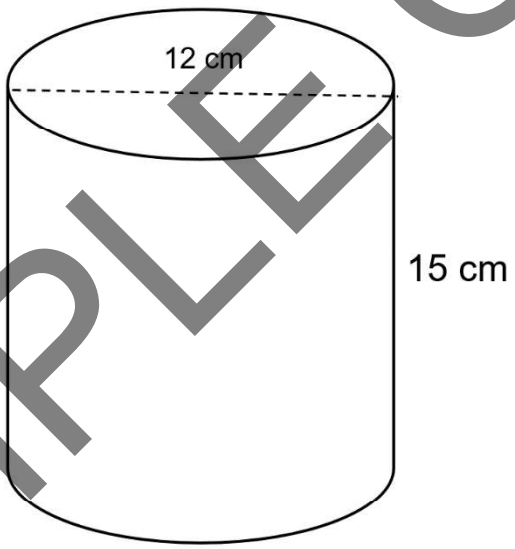
G $y = x + 0.4$

H $y = 0.4x$

J $y = x + 0.4$

2 (8.6A)

A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V = Bh$, where B represents the area of the base of the cylinder. Which expression can be used to find the value of B, in square centimeters, for this cylinder?

A $\pi(6)^2$

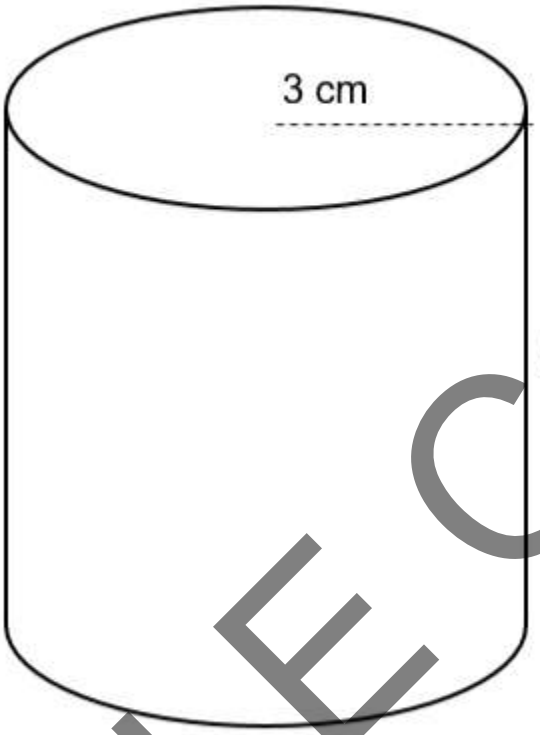
B $\pi(15)^2$

C $2\pi(6)$

D $\pi(12)^2$

3 (8.6A)

A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V = Bh$, where B represents the area of the base of the cylinder. Which expression can be used to find the value of V, in cubic centimeters, for this cylinder?

F $\pi(3)^2 + 9$

G $6\pi(9)^2$

H $9\pi(3)^2$

J $12\pi(3)^2$

SpiralEd Solutions

Spiral 23

1 (8.5B)

Which table contains only corresponding x-values and y-values where the value of y is one more than the product of 3 and x?

A

x	y
8	12
13	17
18	22
23	27

B

x	y
8	25
13	40
18	55
23	70

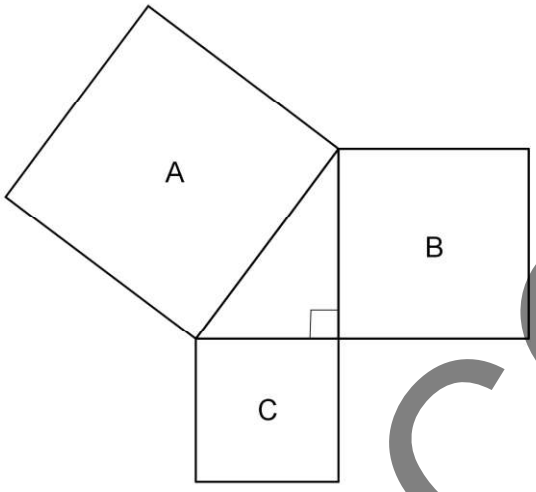
C

x	y
8	24
13	39
18	54
23	69

D

x	y
8	2.7
13	4.3
18	6
23	7.7

2 (8.6C) A student is given the diagram below and instructed to cover each square region with congruent square tiles without leaving gaps or overlapping any tiles.



Based on this activity, which statement is true?

F The number of square tiles used to cover Region A minus the number of tiles used to cover Region B will equal the number of square tiles used to cover Region C.

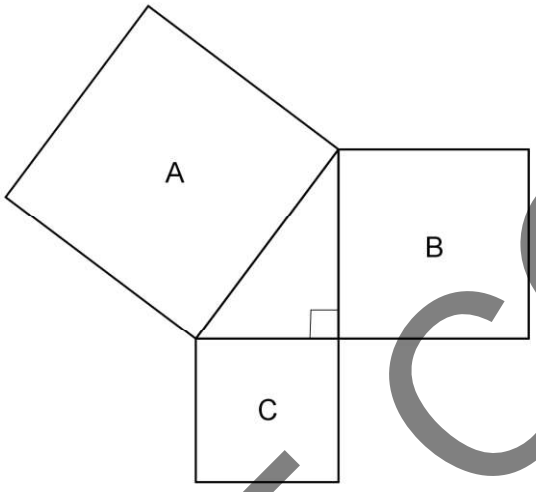
G The number of square tiles used to cover Region B minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region A.

H The number of square tiles used to cover Region A plus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

J The number of square tiles used to cover Region B minus the number of tiles used to cover Region A will equal the number of square tiles used to cover Region C.

3 (8.6C)

A student is given the diagram below and instructed to cover each square region with congruent square tiles without leaving gaps or overlapping any tiles.



Based on this activity, which statement is true?

A The number of square tiles used to cover Region A plus the number of tiles used to cover Region B will equal the number of square tiles used to cover Region C.

B The number of square tiles used to cover Region B plus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region A.

C The number of square tiles used to cover Region A plus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

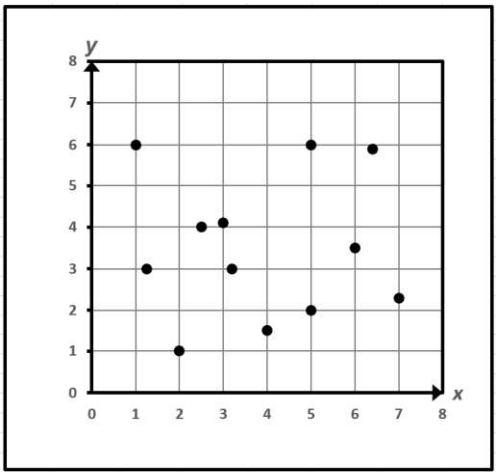
D The number of square tiles used to cover Region B minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region A.

Spiral 24

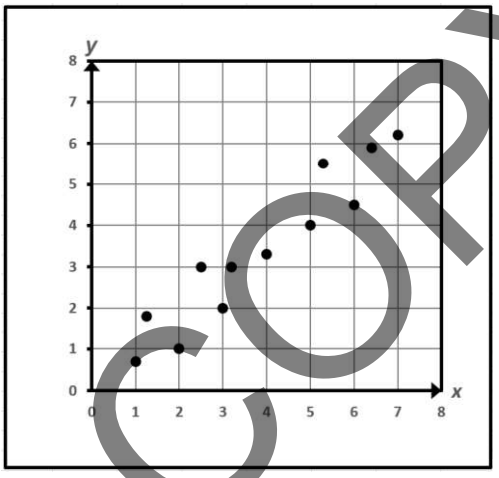
1 (8.5C)

Which scatterplot suggests a linear relationship between x and y?

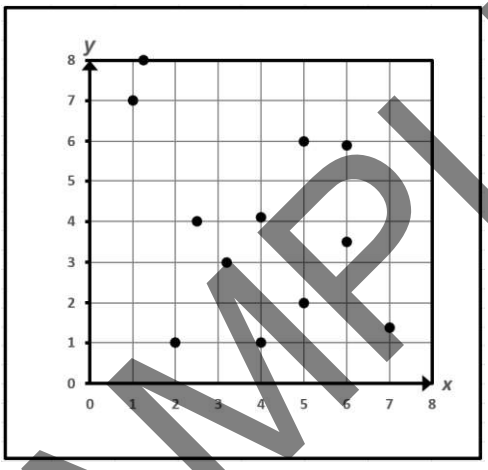
F



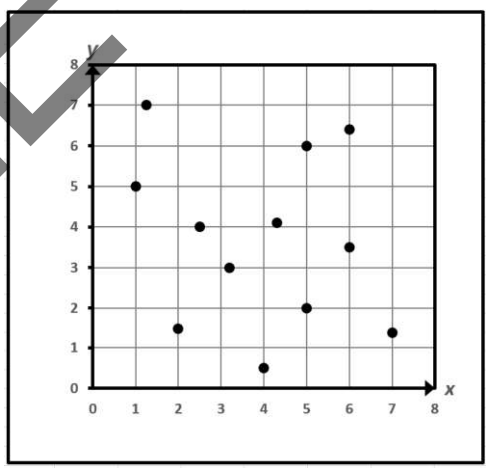
G



H

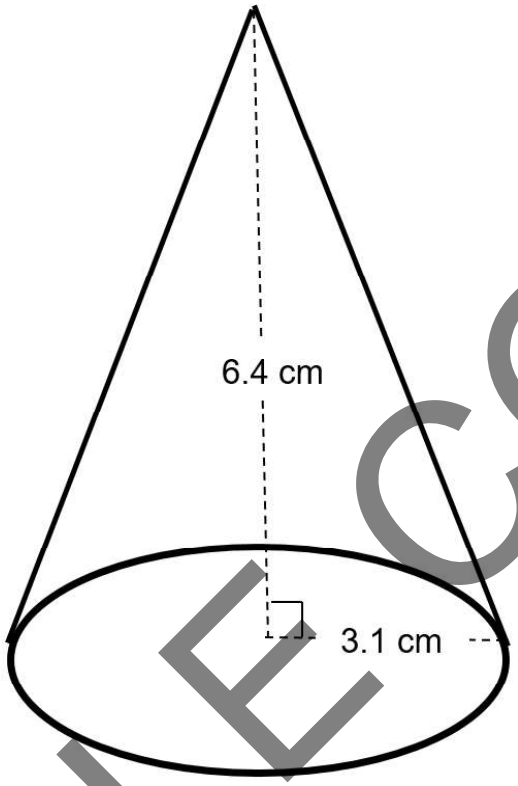


J



2 (8.7A)

The height and radius of a cone are shown.



Which measurement is closest to the volume of the cone in cubic centimeters?

A 20.5 cm^3

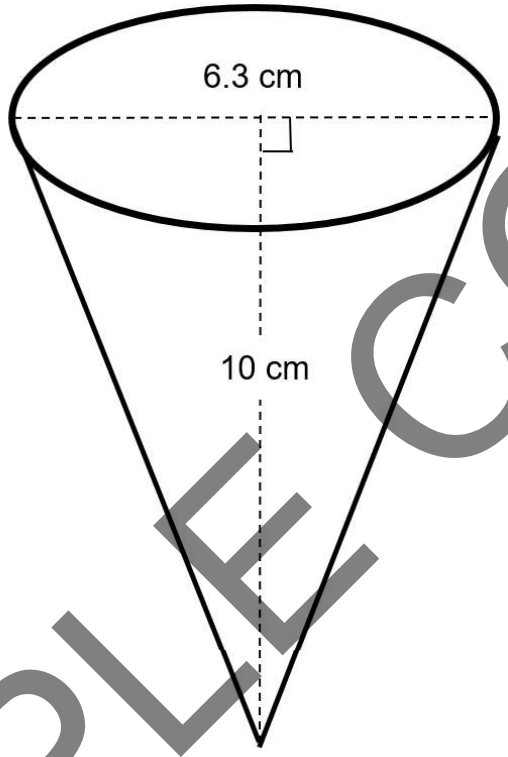
B 10.06 cm^3

C 64.37 cm^3

D 132.9 cm^3

3 (8.7a)

The height and diameter of a paper water cup in the shape of a cone are shown.



Which measurement is closest to the volume of the cup in cubic centimeters?

F 65.94 cm^3

G 103.86 cm^3

H 33.08 cm^3

J 10.39 cm^3

SpiralEd Solutions

Spiral 25

1 (8.5E)

The value of y varies directly with x. When $y = 9$, $x = 4\frac{1}{2}$. What is the value of y when $x = 36$?

A 72

B 18

C 9

D 48

2 (8.7A)

6.7A 15

A sphere has a radius of 3 inches. Which measurement is closest to the volume of the sphere in cubic inches?

F 339.12 in^3

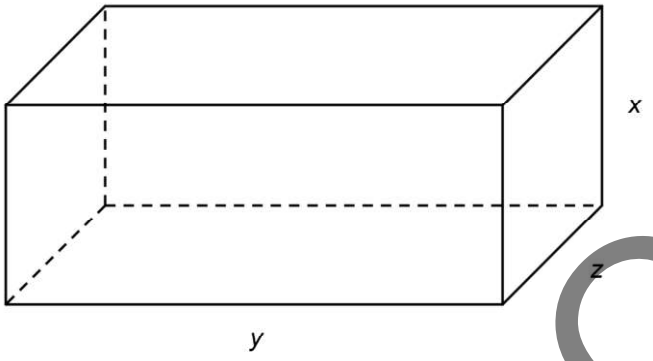
G 113.04 in^3

H 84.78 in^3

J 904.32 in^3

3 (8.7B)

A rectangular prism is shown in the diagram.



Which equation can be used to determine the lateral surface area of the prism?

A $S = (2y + 2z)x$

B $S = (2y + 2z)2x$

C $S = (y + z)x$

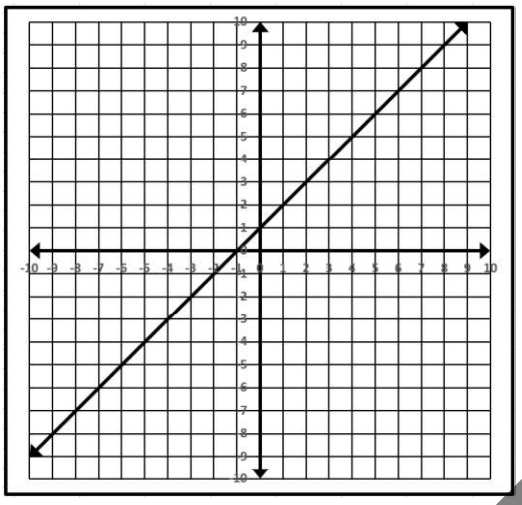
D $S = (2y + 2z)x + 2zy$

Spiral 26

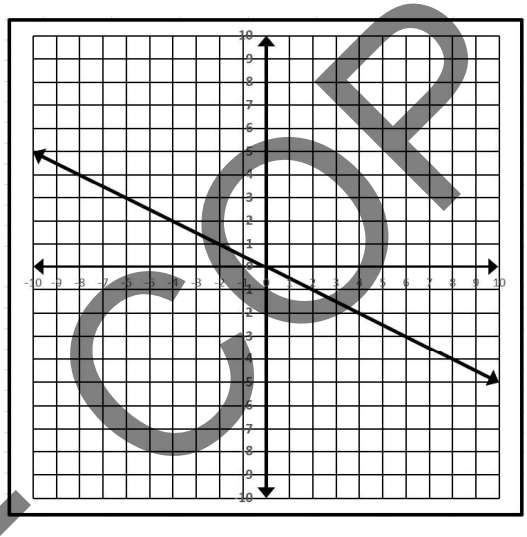
1 (8.5F)

Which graph shows a proportional relationship between x and y ?

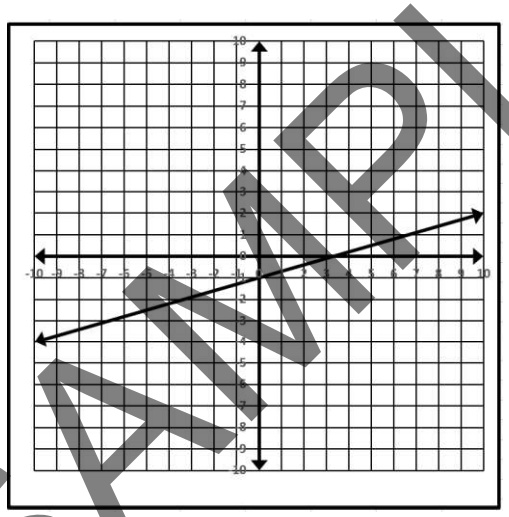
F



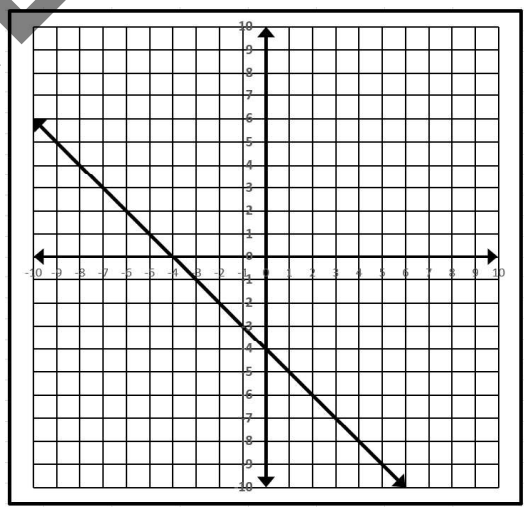
G



H

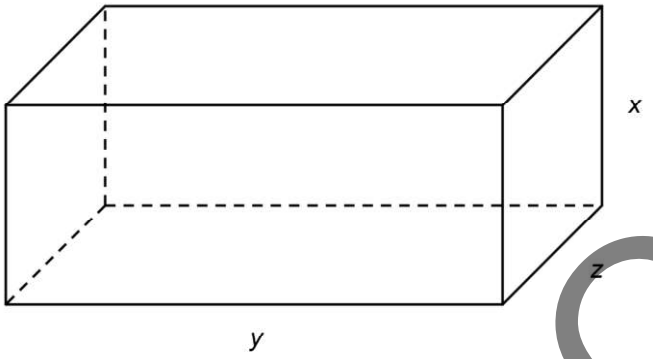


J



2 (8.7B)

A rectangular prism is shown in the diagram.



Which equation can be used to determine the total surface area of the prism?

A $S = (2y + 2z)x$

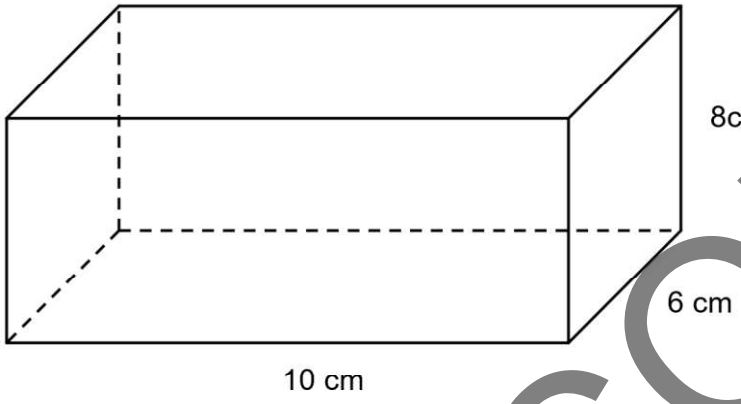
B $S = (2y + 2z)2x$

C $S = (y + z)x$

D $S = (2y + 2z)x + 2zy$

3 (8.7B)

A rectangular prism and its dimensions are shown in the diagram.



What is the lateral surface area of this rectangular prism in square centimeters?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

					.		
⊕	0	0	0	0		0	0
⊖	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

SpiralEd Solutions

Spiral 27

1 (8.5H)

Which situation represents a proportional relationship?

A The cost of buying pizza at $5.75 each with a delivery charge of $20.

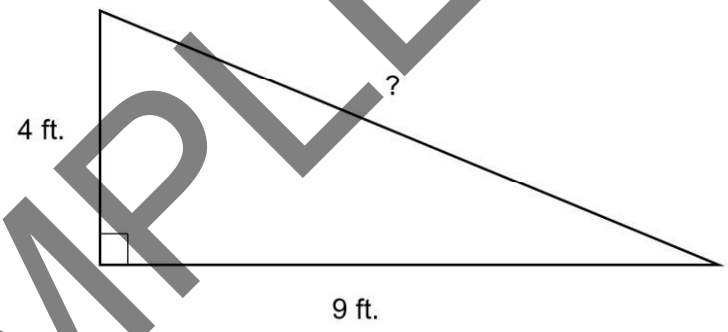
B The cost of buying hamburgers at $4.85 each.

C The cost of buying chicken tenders at $2.29 each with a soda for $1.75.

D The cost of buying barbecue for $9.25 per pound with a side at $2.25.

2 (8.7C)

The diagram below shows a right triangle.



Which measurement is closest to the length of the missing side in feet?

F 9.8 ft.

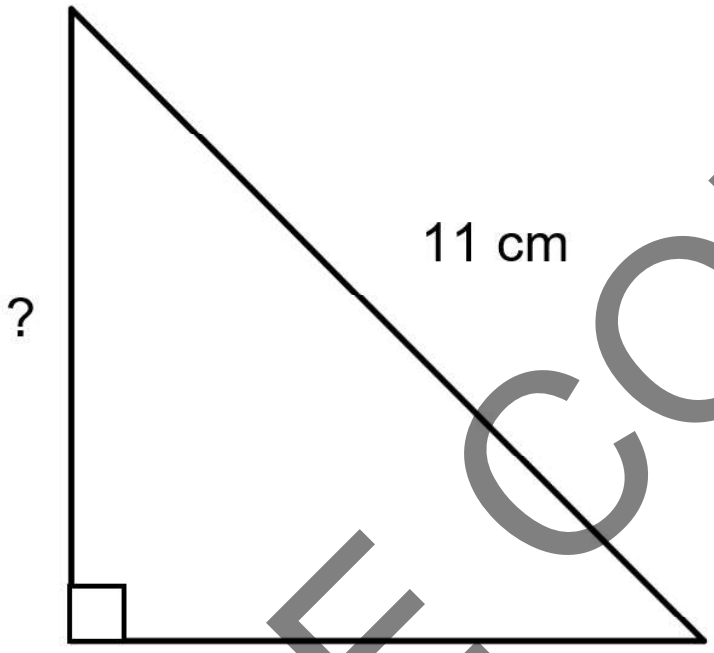
G 97 ft.

H 9.1 ft.

J 9.9 ft.

3 (8.7C)

The diagram below shows an isosceles right triangle.



Which measurement is closest to the length of the missing side in centimeters?

A 18.6 cm

B 15.6 cm

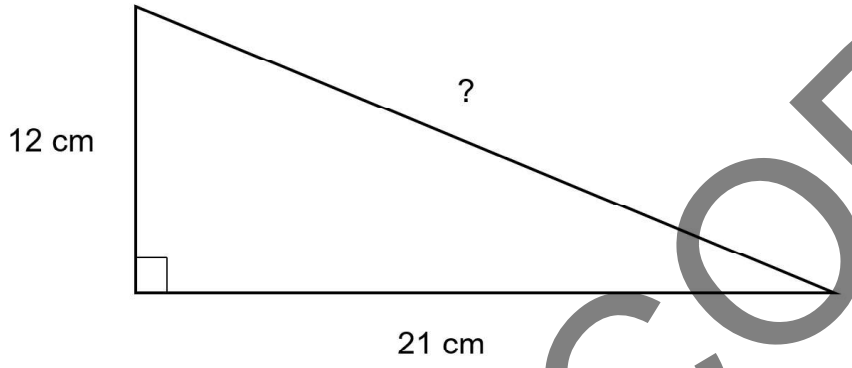
C 60.5 cm

D 7.8 cm

Spiral 28

1 (8.7C)

The diagram below shows a right triangle.



Which measurement is closest to the length of the missing side in centimeters?

F 17.2 cm

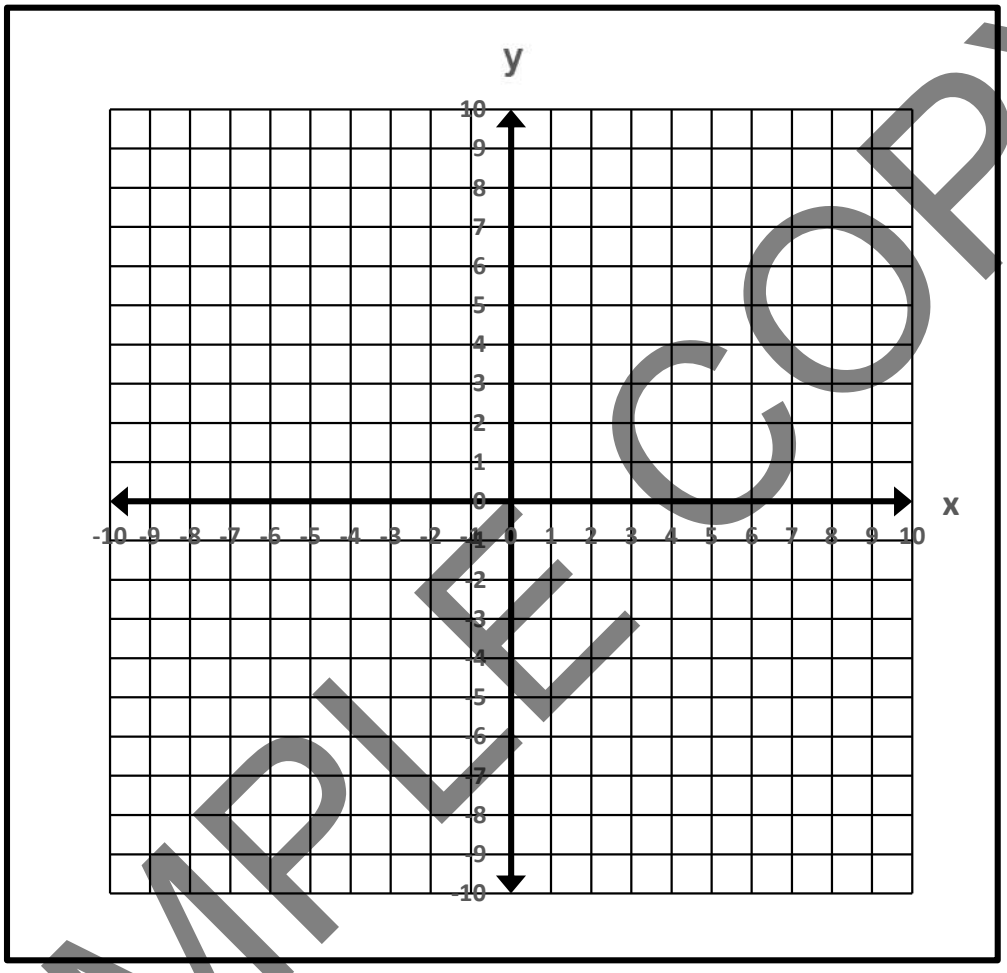
G 24.2 cm

H 585 cm

J 33 cm

2 (8.7D)

Point *A* is located at (4,-2) on a coordinate grid. Point *B* is located at (5,1) on the same grid.



Which measurement is closest to the distance between point *A* and point *B* in units?

A 3 units

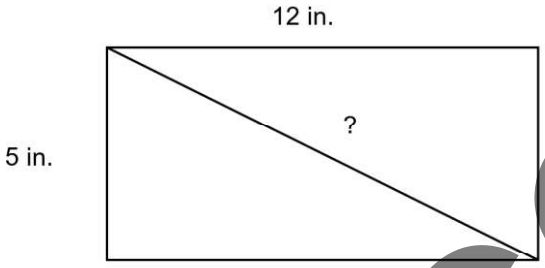
B 5 units

C 2 units

D 4 units

3 (8.7C)

The diagram below shows a rectangle cut by a diagonal.



Which measurement is closest to the length of the diagonal in inches?

F 169 in.

G 10.9 in.

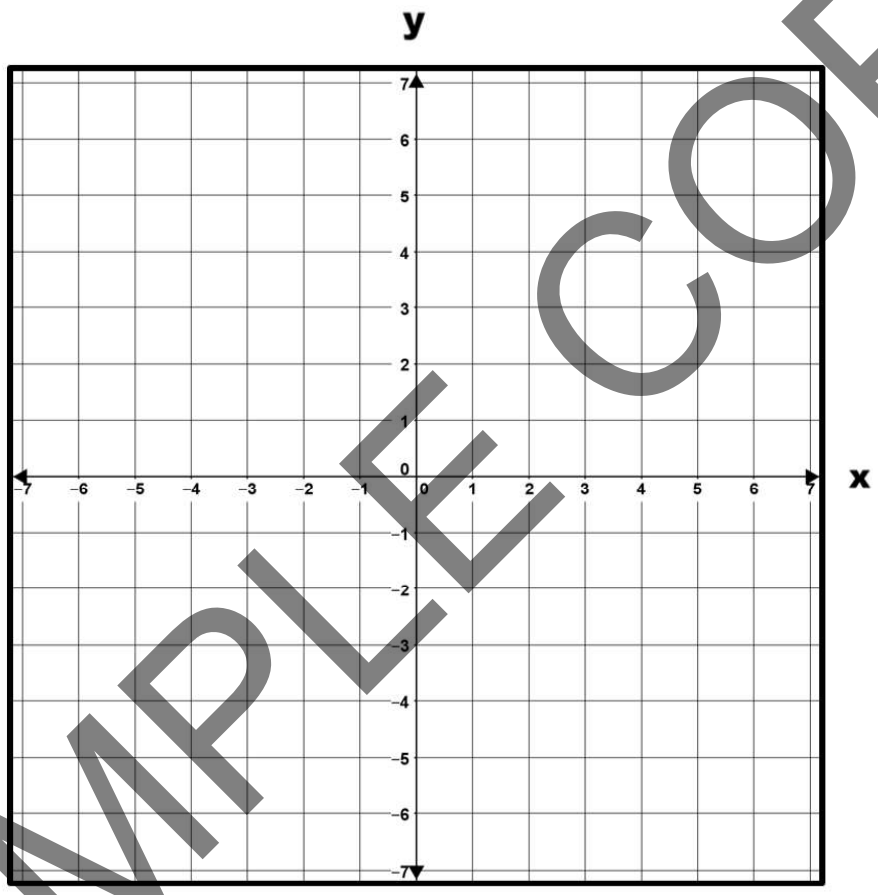
H 15 in.

J 13 in.

Spiral 29

1 (8.7D)

Point *J* is located at (-3,4) on a coordinate grid. Point *J* is translated 8 units to the right and 6 units down to create point *J′*.



Which measurement is closest to the distance between point *J* and point *J′* in units?

A 8 units

B 15 units

C 10 units

D 12 units

2 (8.8A)

A birthday party at Party Place A costs $8 per child plus a cleaning fee of $72. A birthday party at Party Place B costs $12 per child. Which equation can be used to find *c*, the number of children attending the party, so that the total charge at Party Place A is equal to the total charge at Party Place B?

F $8c - 72 = 12c$

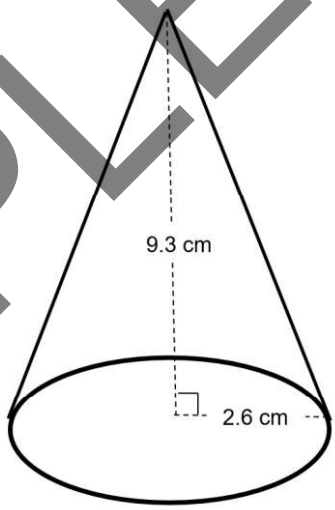
G $12c + 72 = 8c$

H $12c + 8c = 72$

J $8c + 72 = 12c$

3 (8.7A)

The height and radius of a cone are shown.



Which measurement is closest to the volume of the cone in cubic centimeters?

A 7.08 cm^3

B 20.96 cm^3

C 263.21 cm^3

D 65.8 cm^3

Spiral 30

1 (8.8A)

Wedding Venue A charges $25 per guest plus a rental fee of $1000. Wedding Venue B charges $45 per guest plus a rental fee of $800. Which equation can be used to find *g*, the number of guests attending the wedding, so that the total charge at Wedding Venue A is equal to the total charge at Wedding Venue B?

F $1000 + 45g = 800 + 25g$

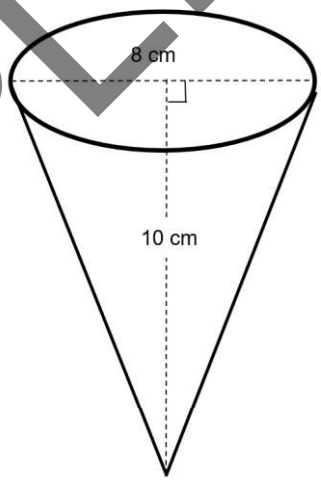
G $1000 - 25g = 800 - 45g$

H $1000 + 25g = 800 + 45g$

J $1000 - 25g = 800 + 45g$

2 (8.7A)

The height and diameter of an ice cream cone are shown.



Which measurement is closest to the volume of the cone in cubic centimeters?

A 167.47 cm^3

B 50.24 cm^3

C 669.87 cm^3

D 502.41 cm^3

3 (8.8B)

Which of the following problems can be solved by using the equation, $12h + 300 = 10h + 400$, where *h* represents the number of hours worked?

F Job A pays 12 dollars per hour with a $400 signing bonus, while Job B pays 10 dollars per hour with a $300 signing bonus. Write an equation to calculate the number of hours, *h*, an employee will have to work to earn an equal amount of money for Job A and Job B.

G Job A pays provides a $300 signing bonus and pays 12 dollars per hour, while Job B pays 10 dollars per hour with a $400 signing bonus and a $100 uniform fee. Write an equation to calculate the number of hours, *h*, an employee will have to work to earn an equal amount of money for Job A and Job B.

H Job A pays 12 dollars per hour with a $300 signing bonus, while Job B pays 10 dollars per hour with a $400 signing bonus. Write an equation to calculate the number of hours, *h*, an employee will have to work to earn an equal amount of money for Job A and Job B.

J Job A pays a $400 signing bonus and 10 dollars per hour, while Job B pays 12 dollars per hour with a $40 uniform charge per paycheck. Write an equation to calculate the number of hours, *h*, an employee will have to work to earn an equal amount of money for Job A and Job B.

SpiralEd Solutions

Spiral 31

1 (8.8B)

Which of the following problems can be solved by using the equation, $240 + 36h = 72h + 120$, where *h* represents hours worked.

A Electrician A charges $36 per hour plus a service fee of $120, while Electrician B charges $72 per hour plus a service fee of $240 per hour. Write an equation to calculate the number of hours, *h*, that each electrician would have to work for their total charges to be equal.

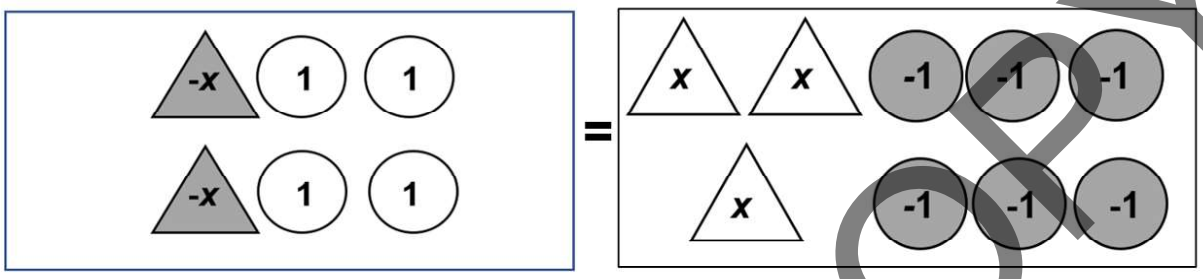
B Plumber A charges a service fee of $240 plus an hourly rate of $36. Plumber B charges $72 each hour with a service fee of $120. Write an equation to calculate the number of hours, *h*, that each plumber would have to work for their total charges to be equal.

C Mechanic A charges $36 per hour plus a service fee of $240. Mechanic B charges a service fee of $120 with an hourly rate of $72 per hour after the first two hours. Write an equation to calculate the number of hours, *h*, that each mechanic would have to work for their total charges to be equal.

D Home Repair Company A charges $240 for a house call, plus an hourly rate of $72. Home Repair Company B charges $120 for a house call, plus an hourly rate of $36. Write an equation to calculate the number of hours, *h*, that each home repair company would have to work for their total charges to be equal.

2 (8.8C)

The model represents an equation.



What value of *x* makes the equation true?

F 2

G -2

H -10

J $\frac{2}{5}$

3 (8.7A)

A cone has a radius of 3.2 inches and a height of 5 inches. Which measurement is closest to the volume of the cone in cubic inches?

A 160.77 in^3

B 53.59 in^3

C 83.7 in^3

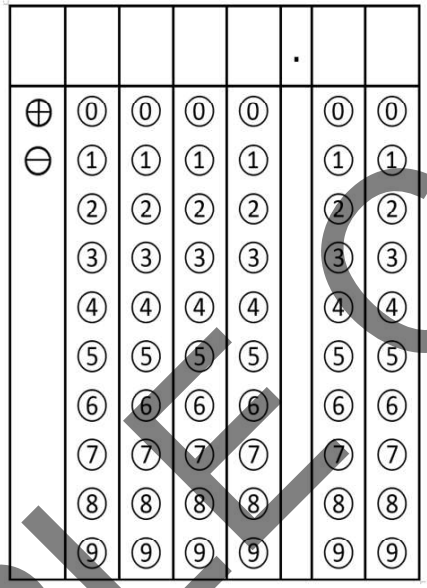
D 214.36 in^3

Spiral 32

1 (8.8C)

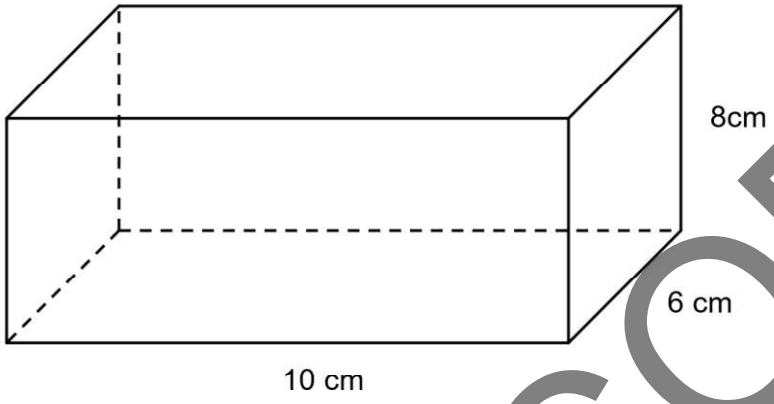
If $-7x - 10 = 5x + 2$, what value of x makes the equation true?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



2 (8.7B)

A rectangular prism and its dimensions are shown in the diagram.



What is the total surface area of this rectangular prism in square centimeters?

A 128 cm^2

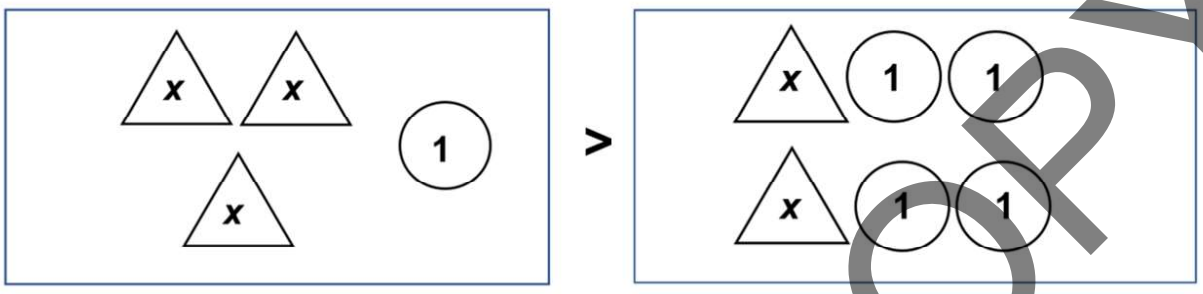
B 256 cm^2

C 480 cm^2

D 376 cm^2

3 (8.8C)

The model represents an inequality.



What values of x makes the inequality true?

F $x < 3$

G $x > -3$

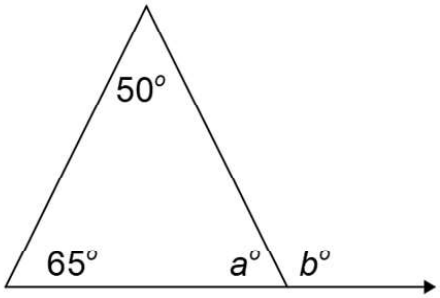
H $x > 2$

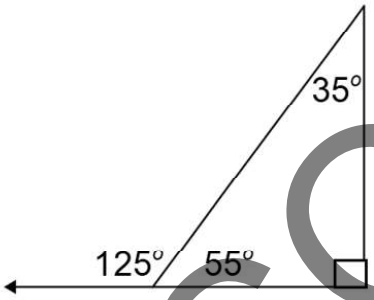
J $x > 3$

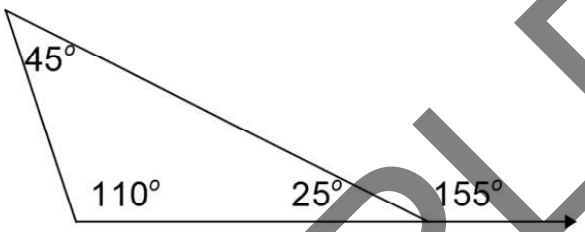
Spiral 33

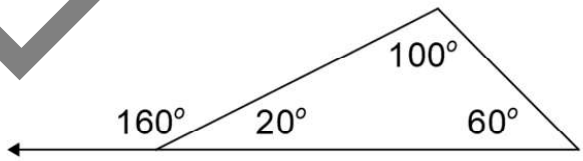
1 (8.8D)

Four triangles are shown.









Based on these triangles, which statement is true?

A $b = 15^o$, because (180 – 65) + 50 = 165 and 180 – 165 = 15.

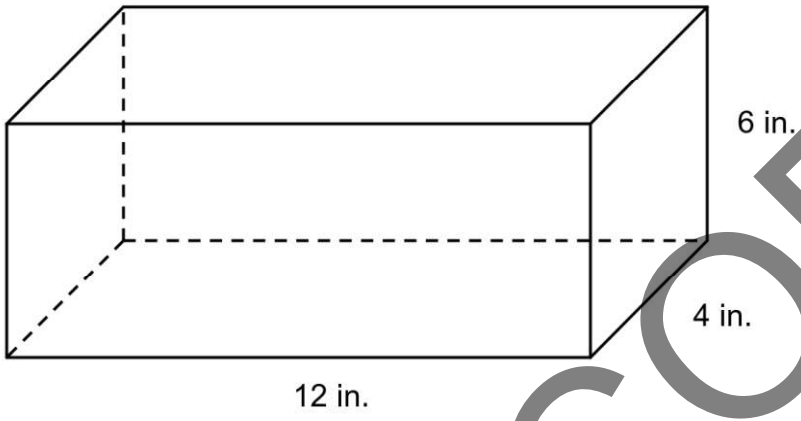
B $b = 65^o$, because 180 – (65 + 50) = 65.

C $b = 57.5^o$, because 180 -65 = 115 and 115 ÷2 = 57.5

D $b = 115^o$, because 180 – (65 + 50) = 65 and 180 – 65 = 115.

2 (8.7B)

A rectangular prism and its dimensions are shown in the diagram.



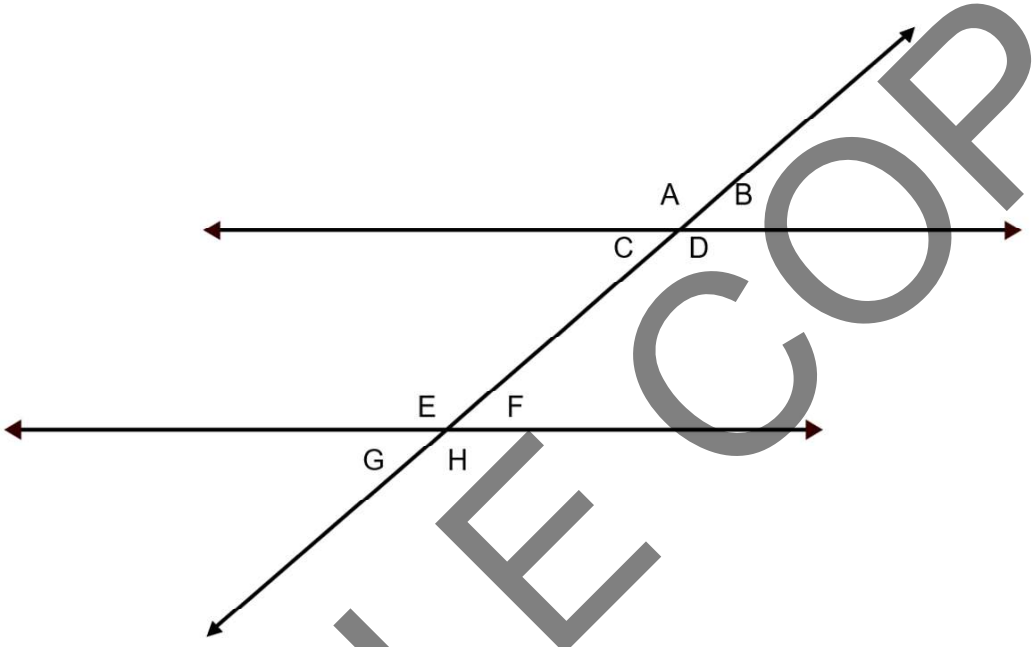
What is the total surface area of this rectangular prism in square inches?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

					.		
⊕	0	0	0	0		0	0
⊖	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

3 (8.8D)

Two parallel lines cut by a transversal are shown.



If $m\angle A = m\angle D$, which of the following is true?

A $m\angle A = m\angle B$

B $m\angle E = m\angle G$

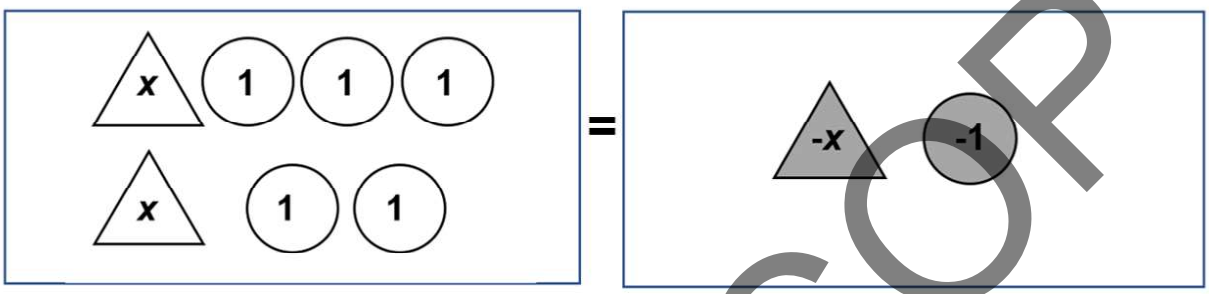
C $m\angle E = m\angle H$

D $m\angle G = m\angle H$

Spiral 34

1 (8.8C)

The model represents an equation.



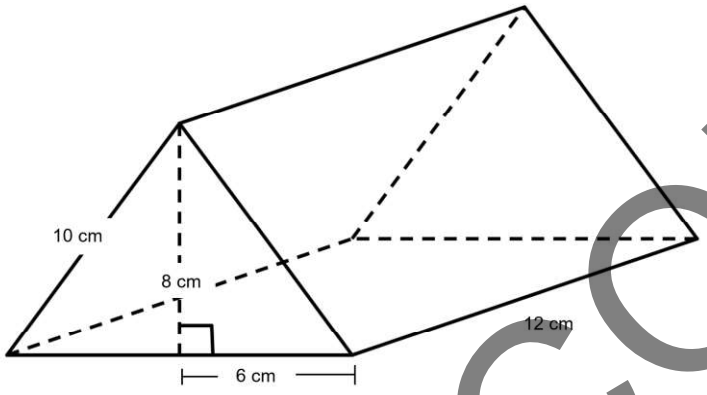
What value of *x* makes the equation true?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

⊕	0	0	0	0		0	0
⊖	1	1	1	1		1	1
	2	2	2	2		2	2
	3	3	3	3		3	3
	4	4	4	4		4	4
	5	5	5	5		5	5
	6	6	6	6		6	6
	7	7	7	7		7	7
	8	8	8	8		8	8
	9	9	9	9		9	9

2 (8.7B)

A triangular prism and its dimensions are shown in the diagram.



Which equation can be used to determine the lateral surface area of the prism?

A $S = (12 + 10 + 10) \bullet 12$

B $S = (12 + 10) \bullet 12$

C $S = [(12 + 10 + 10) \bullet 12] + 2(6 \bullet 8)$

D $S = [(12 + 10 + 10) \bullet 12] + \frac{1}{2}(6 \bullet 8)$

3 (8.8C)

If $\frac{1}{2}x + 4 = 2x - 2$, what value of x makes the equation true?

F -4

G 3

H 1.5

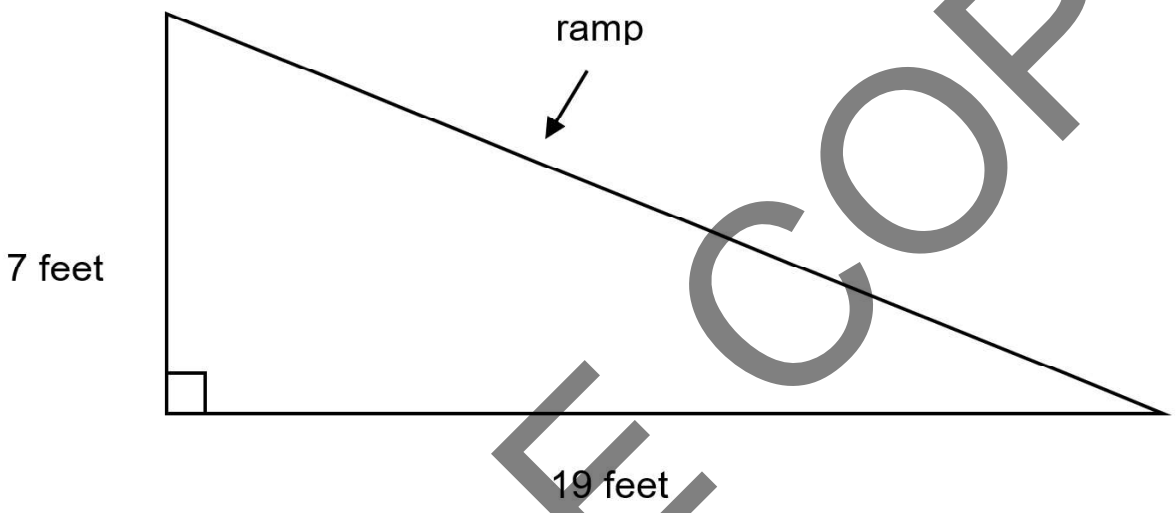
J 4

SpiralEd Solutions

Spiral 35

1 (8.7C)

A ramp is constructed to help move materials onto a loading dock.



Which measurement is closest to the length of the ramp in feet?

A 7.7 ft.
B 24.5 ft.
C 20.2 ft.
D 18.2 ft.

2 (8.8C)

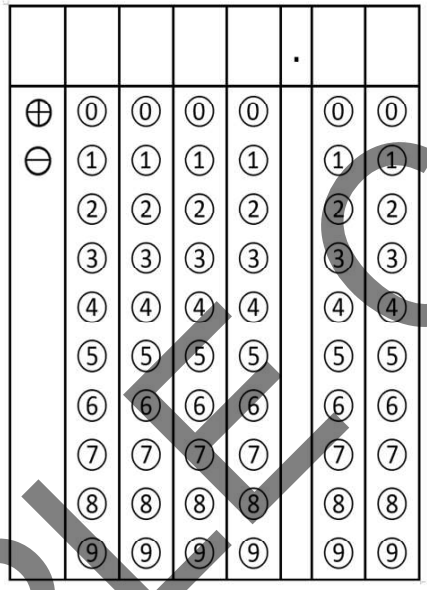
If $7 + 2x \geq 7x - 3$, what values of x makes the inequality true?

F $x \leq 6$
G $x \geq 2$
H $x \geq 6$
J $x \leq 2$

3 (8.8C)

A birthday party at Party Place A costs $8 per child plus a cleaning fee of $72. A birthday party at Party Place B costs $12 per child. Find the number of children, *c*, so that the total charge at Party Place A is equal to the total charge at Party Place B?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

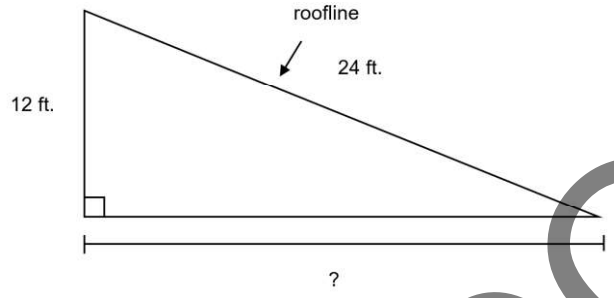


SpiralEd Solutions

Spiral 36

1 (8.7C)

A 24-foot board is used to frame the roofline of a new building.



Which measurement is closest to the horizontal distance from the center line on the roof to the end of the eave?

F 18.9 ft.

G 26.8 ft.

H 21.6 ft.

J 20.8 ft.

2 (8.2D)

Which list shows the numbers below in order from least to greatest?

$$0.852,\ 85.6\%,\ \frac{43}{50},\ \frac{17}{20}$$

A $\frac{17}{20}$, 0.852, 85.6%, $\frac{43}{50}$

B $\frac{17}{20}$, 85.6%, 0.852, $\frac{43}{50}$

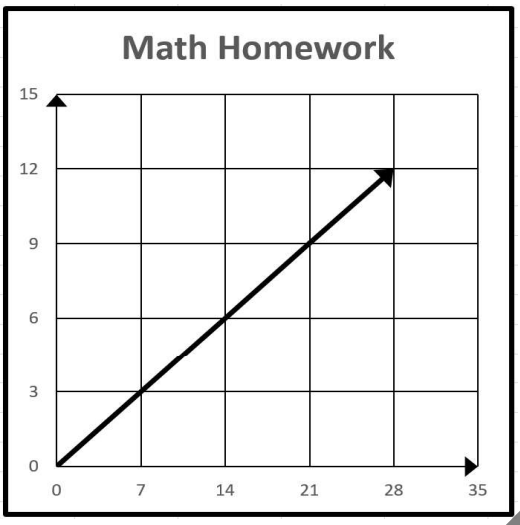
C $\frac{17}{20}$, $\frac{43}{50}$, 85.6%, 0.852

D $\frac{43}{50}$, 85.6%, $\frac{17}{20}$, 0.852

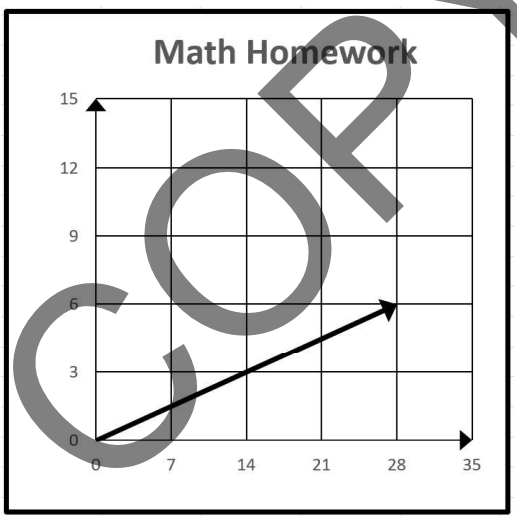
3 (8.4B)

A student completes 3 math homework problems every 7 minutes. Which graph models a relationship with the same unit rate?

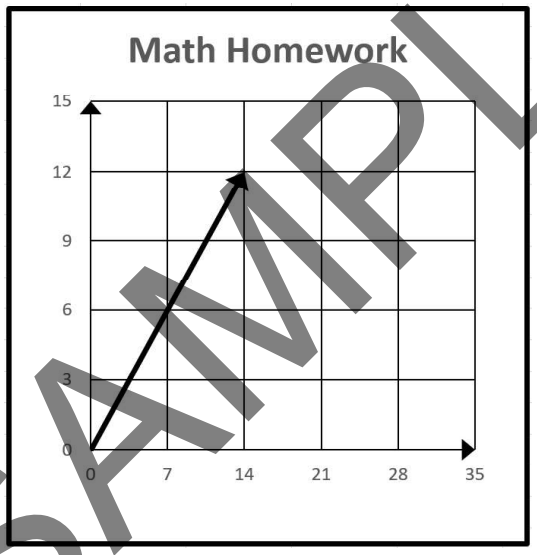
F



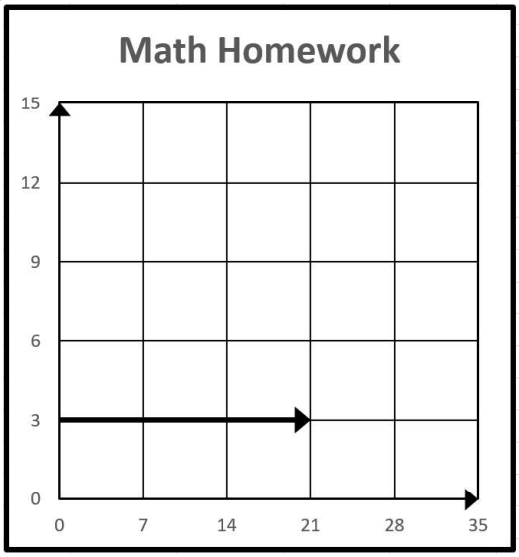
G



H



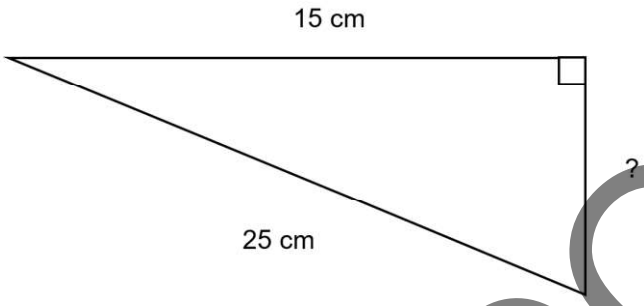
J



Spiral 37

1 (8.7C)

The diagram below shows a right triangle.



Which measurement is closest to the length of the missing side in centimeters?

A 22.1 cm

B 3.9 cm

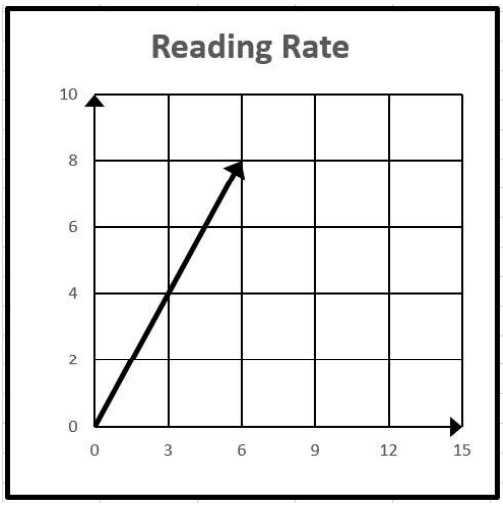
C 20 cm

D 29 cm

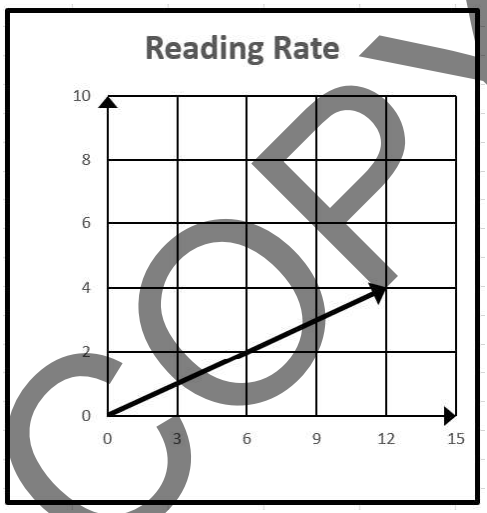
2 (8.4B)

A fourth grader reads 2 pages every 3 minutes. Which graph models a relationship with the same unit rate, showing pages read per minute?

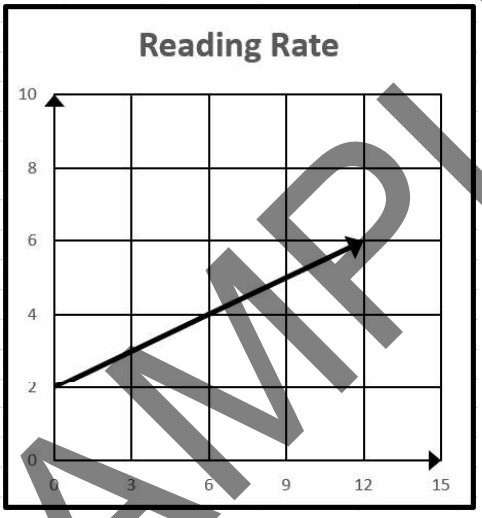
F



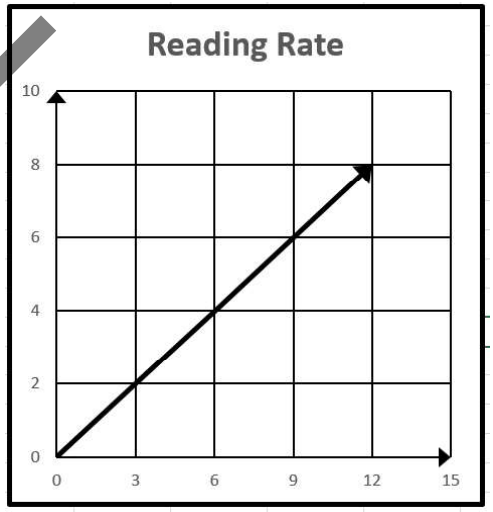
G



H

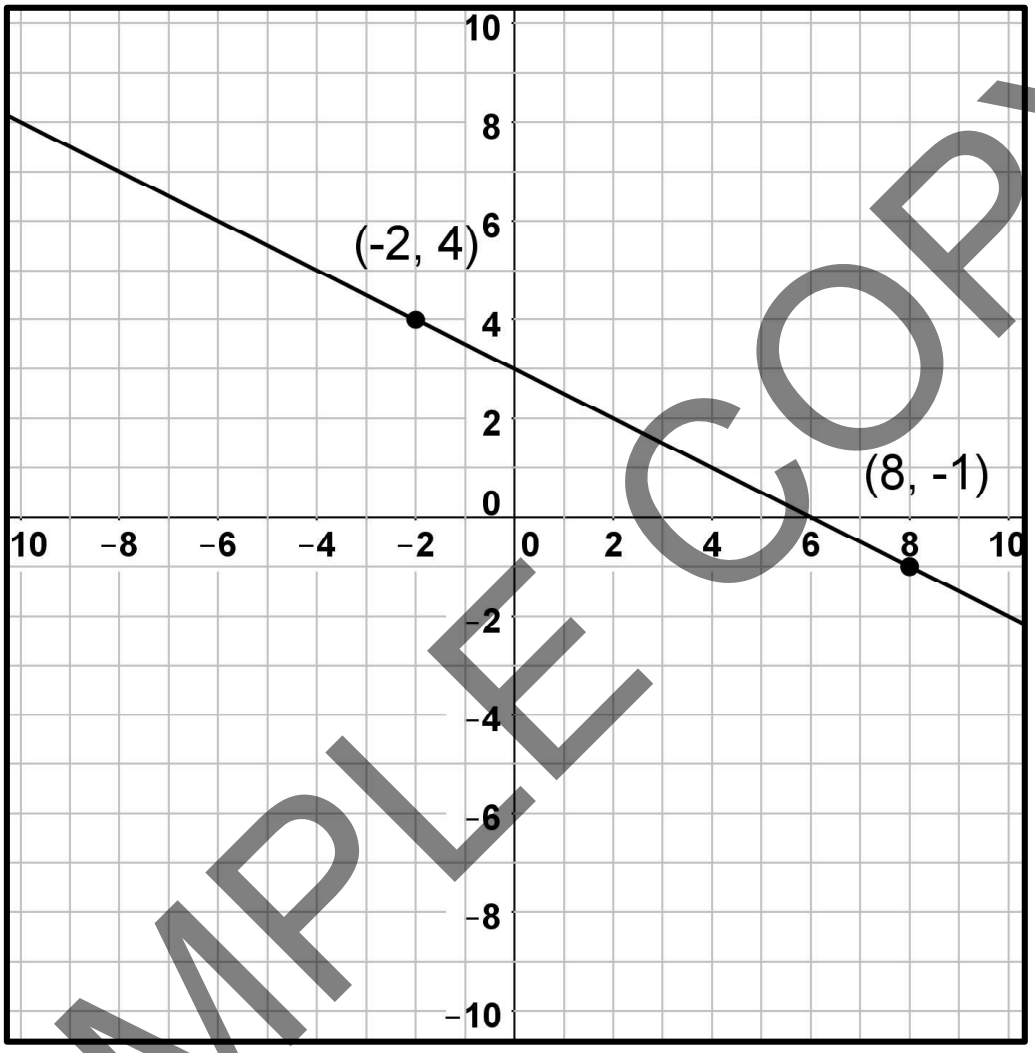


J



3 (8.4C)

The graph of a linear function is shown on the coordinate grid.



What is the slope of the line?

A slope = $-\frac{1}{2}$

B slope = $\frac{1}{2}$

C slope = –2

D slope = 3

Spiral 38

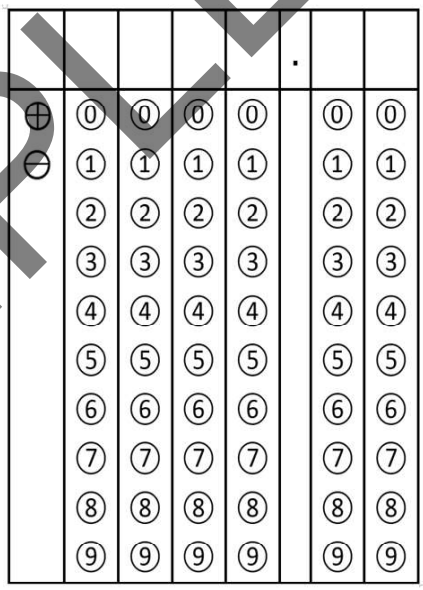
1 (8.4C)

The table shows the input and output for a linear function.

x	y
-4	12
-2	8
0	4
2	0
4	-4

What is the y-intercept for the function?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



2 (8.5G)

Which table represents y as a function of x?

A

x	y
-4	2
-2	4
0	6
-2	8
-4	10

B

x	y
-3	2
-1	4
1	6
-3	8
5	10

C

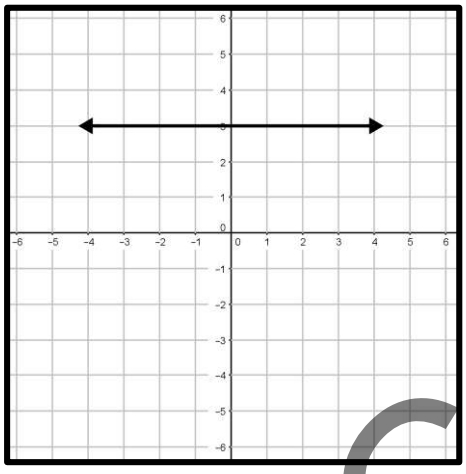
x	y
-4	4
-2	4
0	4
2	4
4	4

D

x	y
-3	-1
-1	-2
-1	-3
3	-1
5	-2

3 (8.5G)

Which statement describes the graph?



F The graph represents *y* as a function of *x*, because each *y*-value corresponds to exactly one *x*-value.

G The graph does not represent *y* as a function of *x*, because two of the *x*-values correspond to the same *y*-value.

H The graph represents *y* as a function of *x*, because each *x*-value corresponds to exactly one *y*-value.

J The graph does not represent *y* as a function of *x*, because horizontal lines are never functions.

SpiralEd Solutions

Spiral 39

1 (8.5I)

Which function is best represented by this table?

x	y
-3	11
0	2
1	-1
5	-13

A $y = -3x + 2$

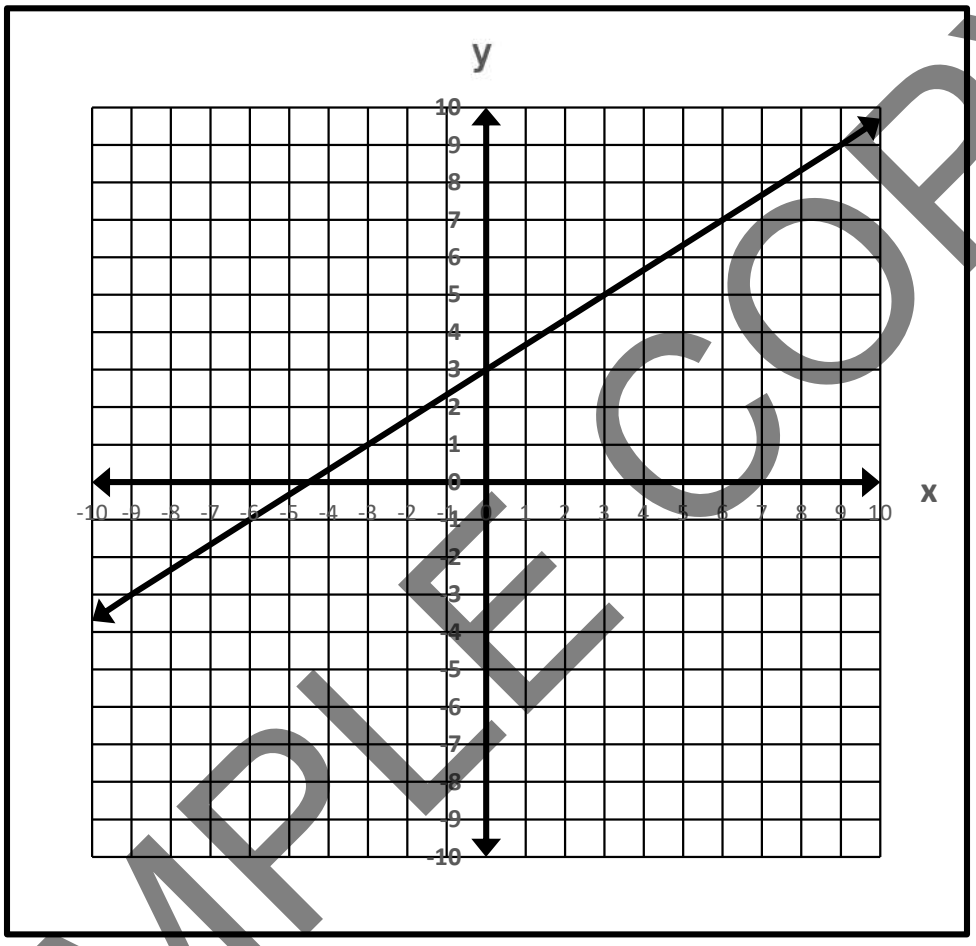
B $y = -2x + 3$

C $y = 2x - 3$

D $y = 3x - 2$

2 (8.5I)

Which function is represented by the graph?



F $y = -\frac{2}{3}x + 3$

G $y = \frac{2}{3}x + 3$

H $y = \frac{2}{3}x - 3$

J $y = -\frac{2}{3}x - 3$

3 (8.7A)

A cone has a diameter of 8.6 centimeters and a height of 9 centimeters. Which measurement is closest to the volume of the cone in cubic centimeters?

A 522.53 cm^3

B 729.11 cm^3

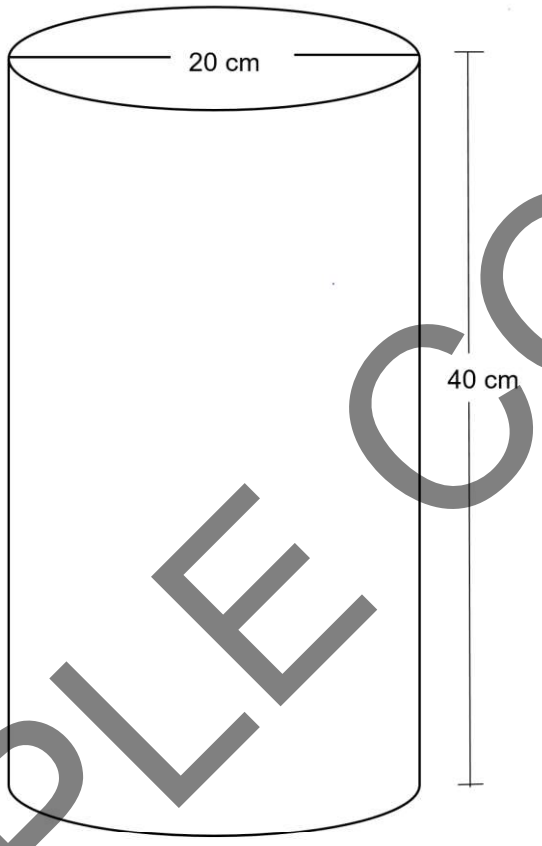
C 77.41 cm^3

D 174.18 cm^3

Spiral 40

1 (8.7B)

A cylinder and its dimensions are shown in the diagram.



Which equation can be used to determine the total surface area of the cylinder?

F $S = 2\pi \cdot 10 \cdot 40$

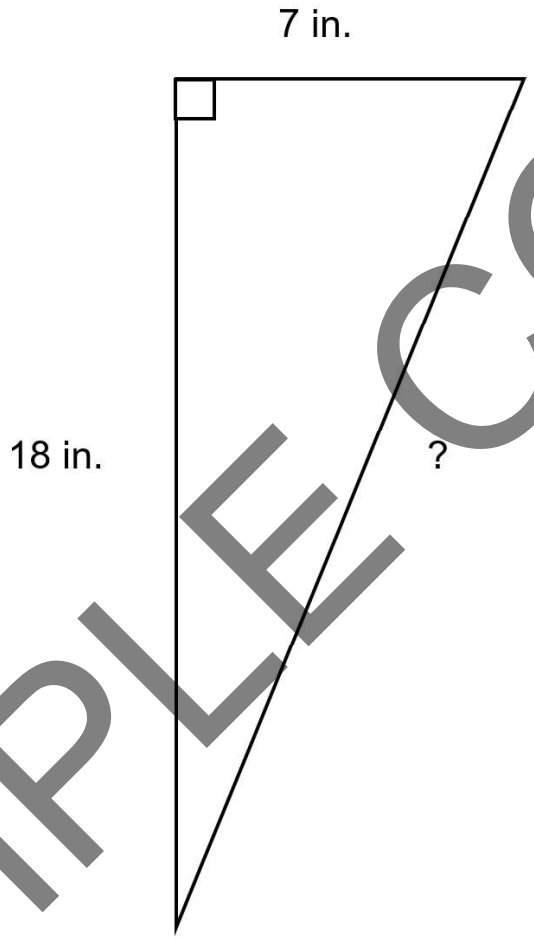
G $S = (2\pi \cdot 20 \cdot 40) + 2\pi 10^2$

H $S = 2 \cdot 20 \cdot 40$

J $S = (2\pi \cdot 10 \cdot 40) + 2\pi 10^2$

2 (8.7C)

The diagram below shows a right triangle.



Which measurement is closest to the length of the missing side in inches?

A 16.6 in.

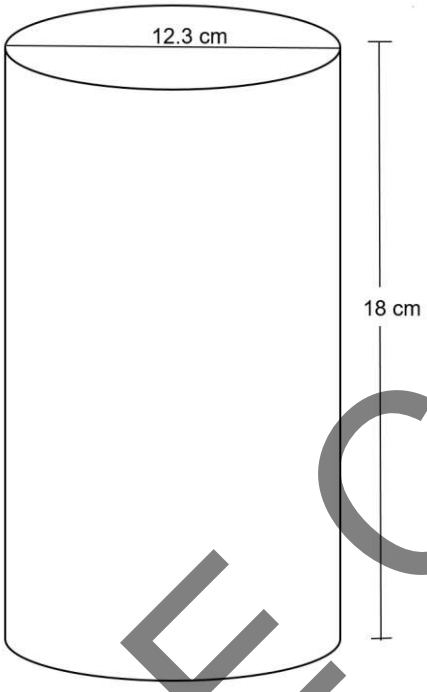
B 275 in.

C 19.3 in.

D 18.6 in.

3 (8.7A)

The height and diameter of a cylinder are shown.



Which measurement is closest to the volume of the cylinder in cubic centimeters?

F 118.76 cm^3

G 8550.91 cm^3

H 1017.36 cm^3

J 2137.73 cm^3

Spiral 41

1 (8.2A)

Which set contains only integers?

A $\{-4, 5.2, \frac{6}{3}, 15\}$

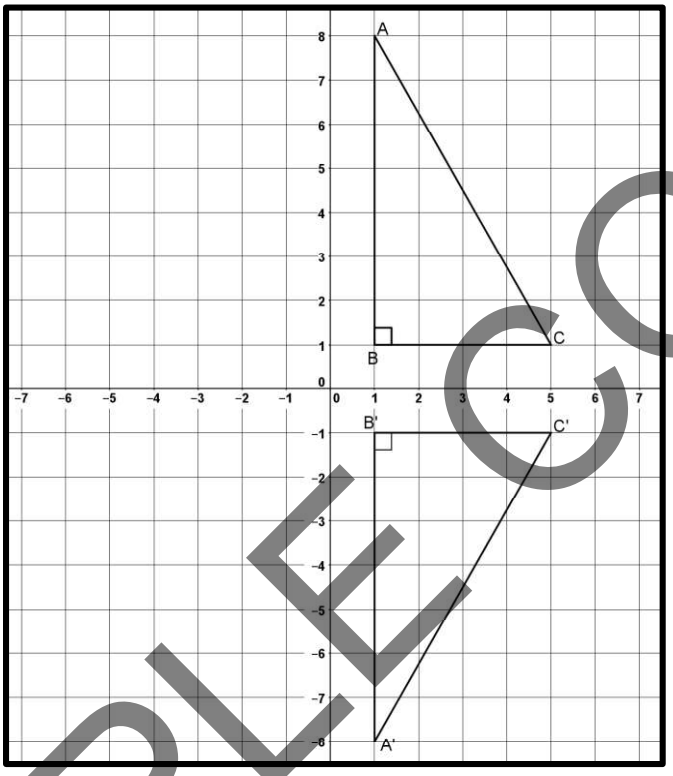
B $\{-2, 8, \pi, -12\}$

C $\{\frac{7}{3}, \sqrt{2}, 1.\overline{2}, 3.566672\}$

D $\{-4, -5, -\frac{8}{2}, \sqrt{9}\}$

2 (8.10A)

$\triangle ABC$ has been transformed to create $\triangle A'B'C'$. Explain what type of transformation is represented and what properties of orientation or congruence are demonstrated.



F $\triangle A'B'C'$ is a reflection of $\triangle ABC$, because congruence is preserved, but orientation and orientation of the vertices is not preserved.

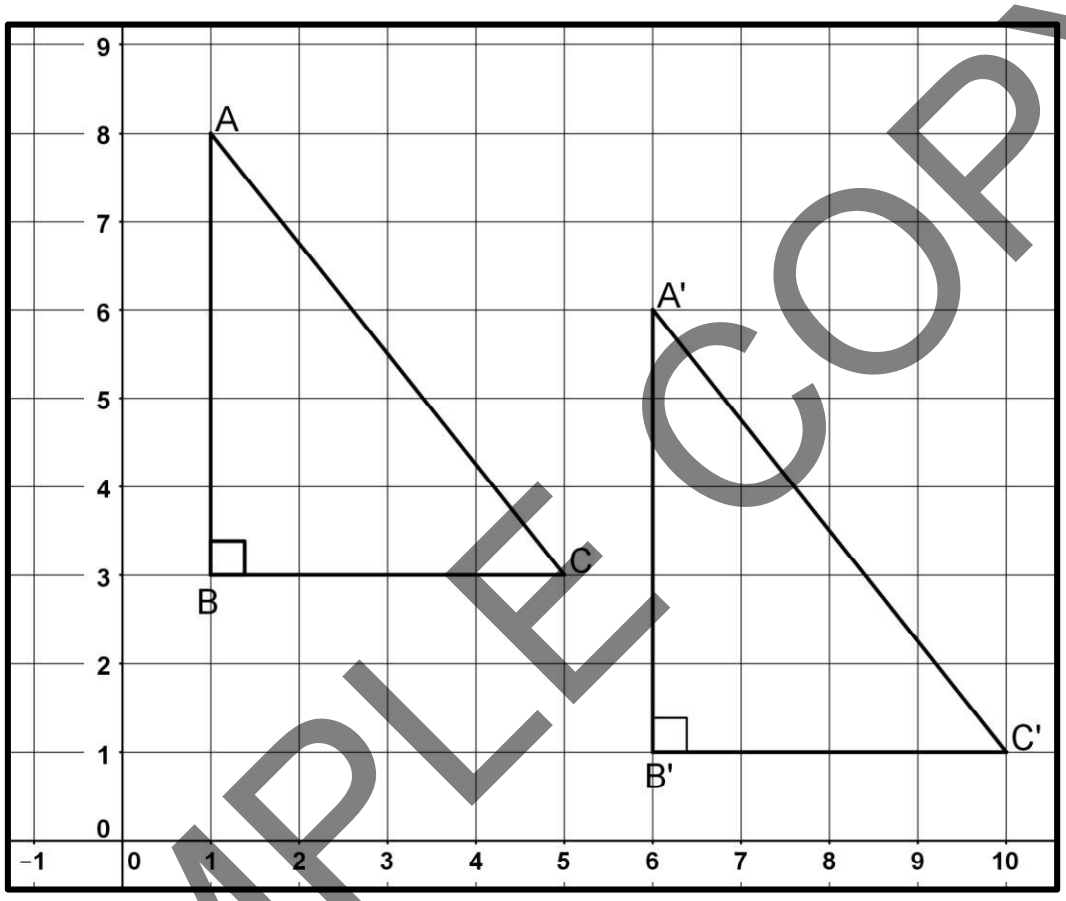
G $\triangle A'B'C'$ is a reflection of $\triangle ABC$, because congruence is not preserved, but orientation and orientation of the vertices are preserved.

H $\triangle A'B'C'$ is a rotation of $\triangle ABC$, because congruence is preserved, but orientation and orientation of the vertices is not preserved.

J $\triangle A'B'C'$ is a translation of $\triangle ABC$, because congruence and orientation are preserved.

3 (8.10A)

$\triangle ABC$ has been transformed to create $\triangle A'B'C'$. Explain what type of transformation is represented and what properties of orientation or congruence are demonstrated.



A $\triangle A'B'C'$ is a reflection of $\triangle ABC$, because congruence is preserved, but orientation and orientation of the vertices is not preserved.

B $\triangle A'B'C'$ is a reflection of $\triangle ABC$, because congruence is not preserved, but orientation and orientation of the vertices are preserved.

C $\triangle A'B'C'$ is a rotation of $\triangle ABC$, because congruence is preserved, but orientation and orientation of the vertices is not preserved.

D $\triangle A'B'C'$ is a translation of $\triangle ABC$, because congruence and orientation are preserved.

SpiralEd Solutions

Spiral 42

1 (8.10B)

Which representation of a transformation on a coordinate grid does **not** preserve congruence?

F $(x,y) \rightarrow (\frac{2}{3}x, \frac{2}{3}y)$ **G** $(x,y) \rightarrow (x+2, y+3)$

H $(x,y) \rightarrow (x+2, -y)$ **J** $(x,y) \rightarrow (x, -y)$

2 (8.10B)

Which representation of a transformation on a coordinate grid preserves congruence?

A $(x,y) \rightarrow (-x,-y)$ **B** $(x,y) \rightarrow (2x,2y)$

C $(x,y) \rightarrow (3x,3y)$ **D** $(x,y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

3 (8.10C)

Triangle ABC was translated 3 units to the right and 2 units up. Which rule describes the translation that was applied to triangle ABC to create triangle $A'B'C'$?

F $(x,y) \rightarrow (x+3, y+2)$ **G** $(x,y) \rightarrow (x-3, y+2)$

H $(x,y) \rightarrow (x-2, y+3)$ **J** $(x,y) \rightarrow (x-2, y-3)$

SpiralEd Solutions

Spiral 43

1 (8.10C)

Triangle ABC was translated 2 units to the left and 3 units up. Which rule describes the translation that was applied to triangle ABC to create triangle $A'B'C'$?

A $(x,y) \rightarrow (x+3, y+2)$

B $(x,y) \rightarrow (x-3, y+2)$

C $(x,y) \rightarrow (x-2, y+3)$

D $(x,y) \rightarrow (x-2, y-3)$

2 (8.10C)

Triangle ABC was translated 3 units to the left and 2 units up. Which rule describes the translation that was applied to triangle ABC to create triangle $A'B'C'$?

F $(x,y) \rightarrow (x+3, y+2)$

G $(x,y) \rightarrow (x-3, y+2)$

H $(x,y) \rightarrow (x-2, y+3)$

J $(x,y) \rightarrow (x-2, y-3)$

3 (8.10D)

A gardener created a rooftop garden with two rectangular planting boxes that are similar in shape Each dimension of the larger planter is 2.6 times the corresponding dimension of the smaller planter. Which statement is true?

A The area of the larger planter is 2.6 times the area of the smaller planter.

B The area of the larger planter is 5.2 times the area of the smaller planter.

C The perimeter of the larger planter is 2.6 times the perimeter of the smaller planter.

D The perimeter of the larger planter is 6.76 times the perimeter of the smaller planter.

SpiralEd Solutions

Spiral 44

1 (8.10D)

Ray built two dog houses with rectangular floors. Each dimension of the larger doghouse is 1.8 times the corresponding dimension of the smaller doghouse. Which statement is true?

F The area of the floor of the larger doghouse is 1.8 times the area of the floor of the smaller doghouse.

G The area of the floor of the larger doghouse is 3.24 times the area of the floor of the smaller doghouse.

H The perimeter of the floor of the larger doghouse is 3.24 times the perimeter of the floor of the smaller doghouse.

J The perimeter of the floor of the larger doghouse is 3.6 times the perimeter of the floor of the smaller doghouse.

2 (8.10D)

An artist painted the same design on two rectangular canvases that are similar in shape. Each dimension of the larger canvas is 4.1 times the corresponding dimension of the smaller canvas. Which statement is true?

A The area of the larger canvas is 4.1 times the area of the smaller canvas.

B The area of the larger canvas is 16.81 times the area of the smaller canvas.

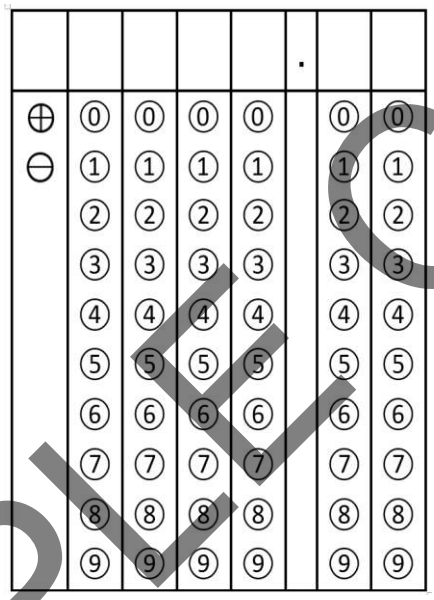
C The perimeter of the larger canvas is 16.81 times the perimeter of the smaller canvas.

D The perimeter of the larger canvas is 8.2 times the perimeter of the smaller canvas.

3 (8.5E)

The value of y varies directly with x. When $y = 2\frac{1}{2}$, $x = 5$. What is the value of y when $x = 20$?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



SpiralEd Solutions

Spiral 45

1 (8.2D)

Which list shows the numbers below in order from greatest to least?

$$75\%,\ \frac{2}{3},\ \frac{4}{5},\ 0.83$$

A $75\%,\ \frac{2}{3},\ \frac{4}{5},\ 0.83$

B $\frac{2}{3},\ 75\%,\ \frac{4}{5},\ 0.83$

C $75\%,\ 0.83,\ \frac{2}{3},\ \frac{4}{5}$

D $0.83,\ \frac{4}{5},\ 75\%,\ \frac{2}{3}$

2 (8.2D)

Which list shows the numbers below in order from greatest to least?

$$\frac{24}{3},\ \sqrt{65},\ 801\%,\ \frac{39}{50}$$

F $\sqrt{65},\ 801\%,\ \frac{39}{50},\ \frac{24}{3},$

G $\frac{39}{50},\ \frac{24}{3},\ 801\%,\ \sqrt{65}$

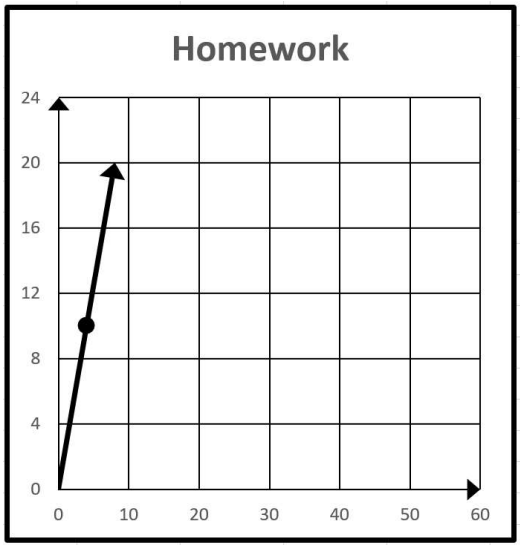
H $\sqrt{65},\ 801\%,\ \frac{24}{3},\ \frac{39}{50}$

J $\frac{24}{3},\ 801\%,\ \sqrt{65},\ \frac{39}{50}$

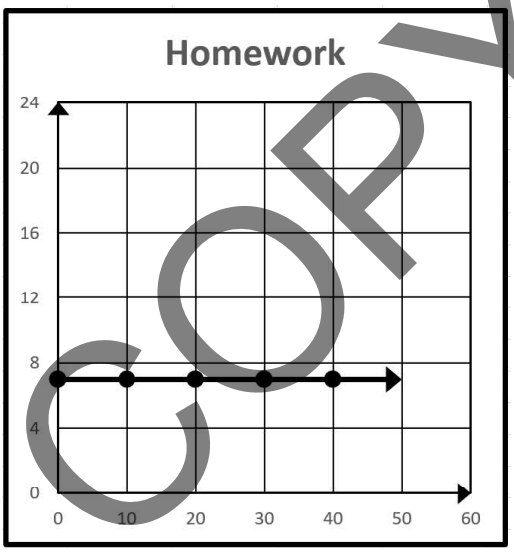
3 (8.4B)

A student completes 2 math homework problems every 5 minutes. Which graph models a relationship with the same unit rate?

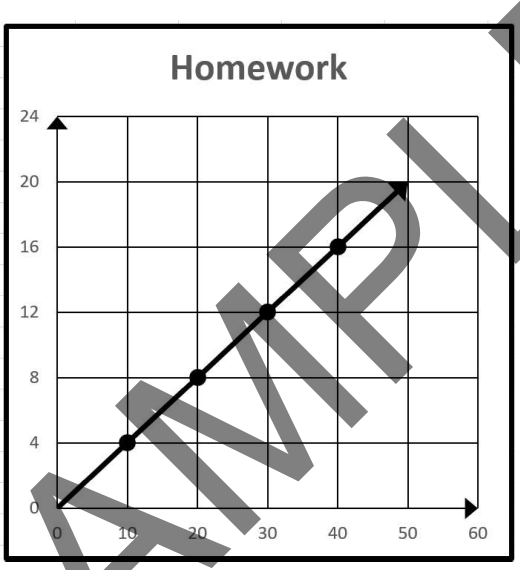
A



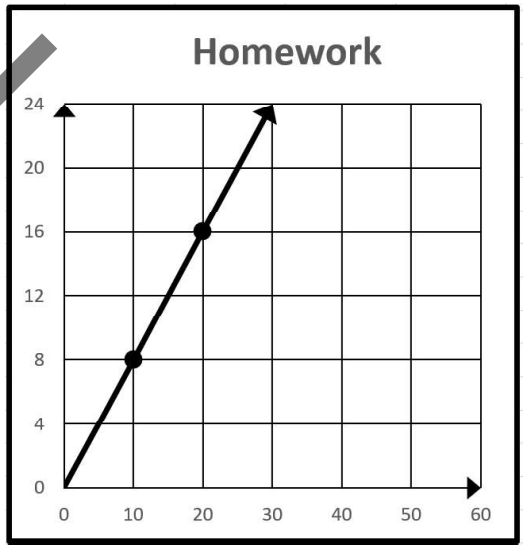
B



C



D

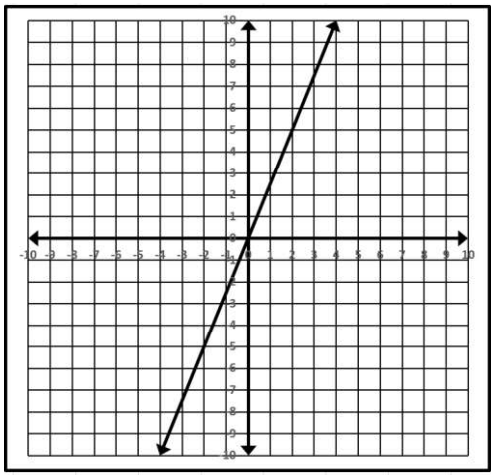


Spiral 46

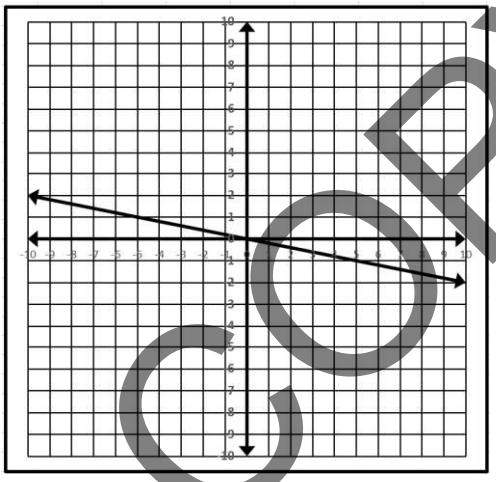
1 (8.5F)

Which graph does **not** show a proportional relationship between x and y?

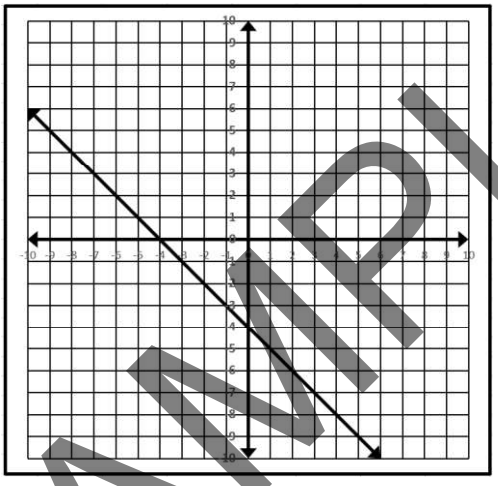
F



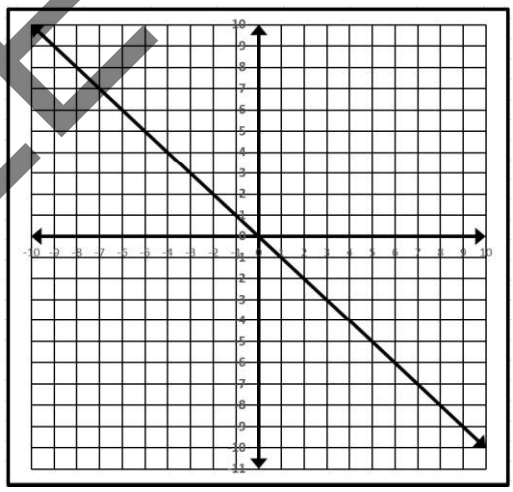
G



H



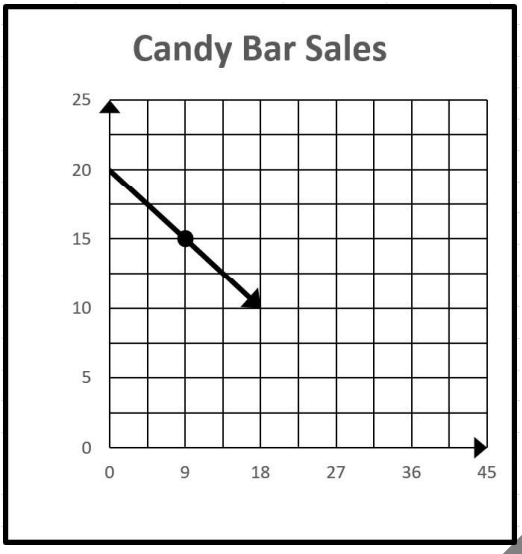
J



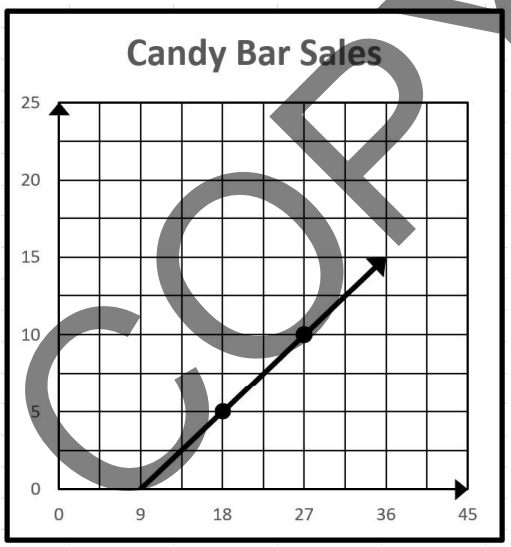
2 (8.4B)

The school band earns $5 for every nine candy bars sold. Which graph models a relationship with the same unit rate showing earnings per number of bars sold?

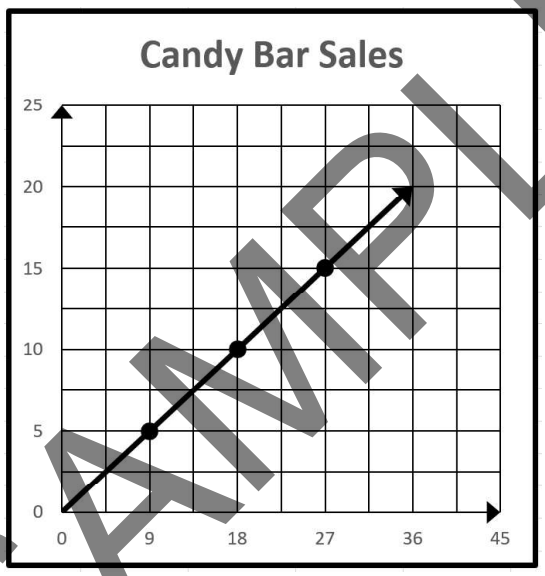
A



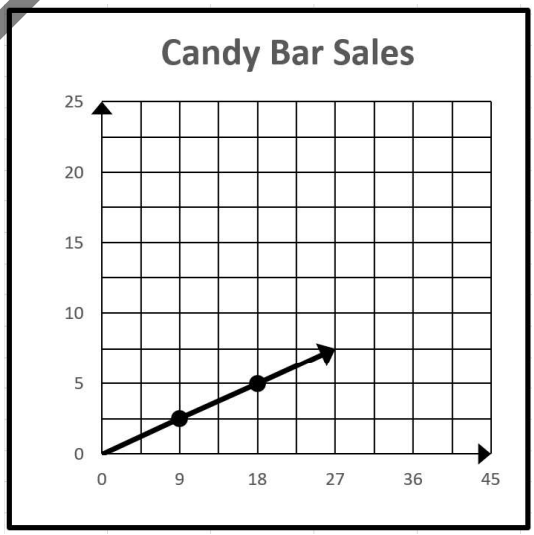
B



C



D



3 (8.4C)

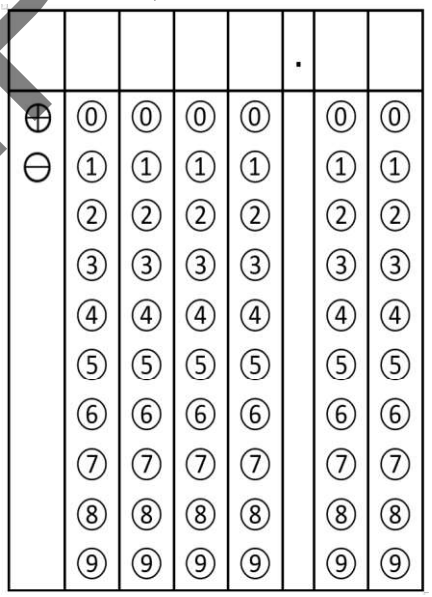
Jason has a savings account that he started with the money his grandmother gave him for graduation. The table shows the amount of money Jason had at the end of x months.

Jason's Savings Account

Number of Months, x	Amount of Savings, y
1	$175
4	$325
8	$525
10	$625
12	$725

How much money does Jason deposit each month?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



Spiral 47

1 (8.4C)

Randall has a savings account that he started with the money his mom gave him for his birthday. Each week he deposits the money he earns mowing his neighbor's lawn. The table shows the amount of money Randall had at the end of x weeks.

Savings Account

Number of weeks, x	1	3	6	8
Amount of savings, y	$100	$180	$300	$380

How much money did Randall receive for his birthday, and how much does he deposit each week?

A He received $100 for his birthday and deposits $80 each week.

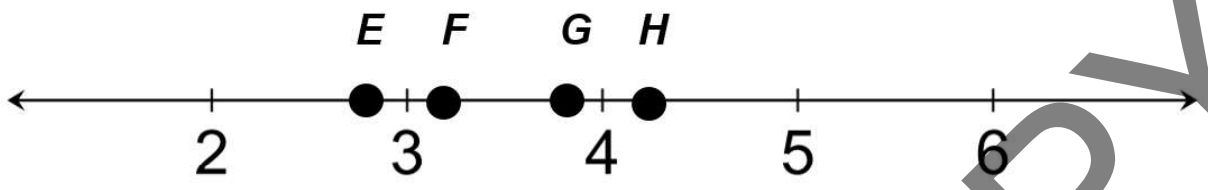
B He received $60 for his birthday and deposits $40 each week.

C He received $60 for his birthday and deposits $60 each week.

D He received $40 for his birthday and deposits $60 each week.

2 (8.2B)

Which point on the number line best represents the location of π ?



F Point *E*

G Point *F*

H Point *G*

J Point *H*

3 (8.5G)

Which set(s) of ordered pairs represent y as a function of x ?

I {(3,2), (-3,-2), (4,5), (-4,-5), (0,8)}

II {(2,2), (-2,-2), (3,5), (-3,-5), (5,8)}

III {(2,5), (-3,-5), (-2,5), (8,-5), (0,8)}

IV {(3,2), (-3,-2), (4,5), (-4,-5), (5,8)}

A I, II, III, IV

B none

C I and III only

D I, II, and IV

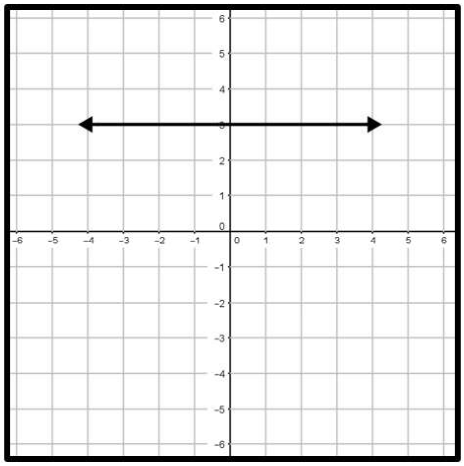
SpiralEd Solutions

Spiral 48

1 (8.5G)

Which does **not** represent y as a function of x?

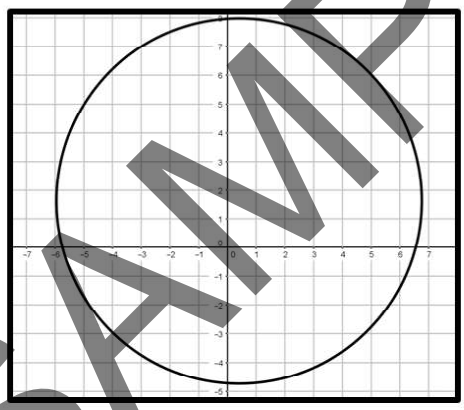
F



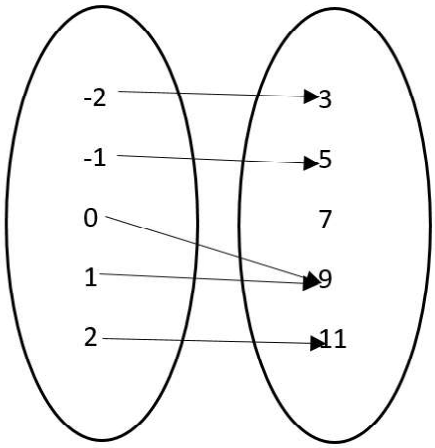
G

x	y
2	3
4	-1
6	1
8	-1
10	3

H

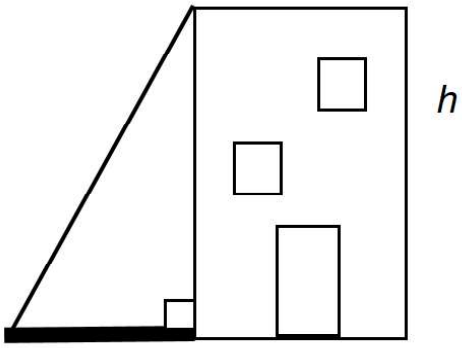


J

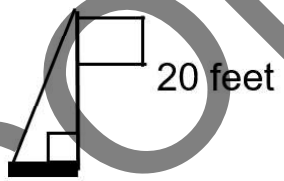


2 (8.3A)

A building casts a 32-foot shadow on the ground, while at the same time a 20-foot flagpole casts a 16-foot shadow.



32-foot shadow



16-foot shadow

Not drawn to scale.

Which proportion can be used to find h, the height of the building in feet?

A $\frac{20}{h} = \frac{32}{16}$

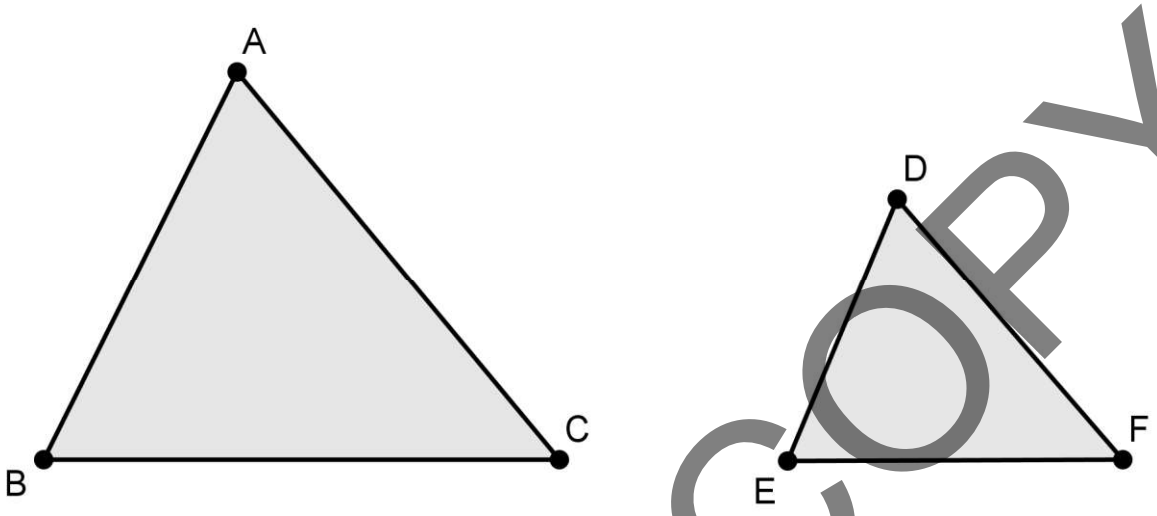
B $\frac{h}{20} = \frac{16}{32}$

C $\frac{20}{16} = \frac{32}{h}$

D $\frac{20}{h} = \frac{16}{32}$

3 (8.3A)

$\triangle DEF$ is a dilation of $\triangle ABC$.



Which proportion shows the correct relationship between the sides of $\triangle DEF$ and $\triangle ABC$?

F $\frac{AB}{DE} = \frac{EF}{BC}$

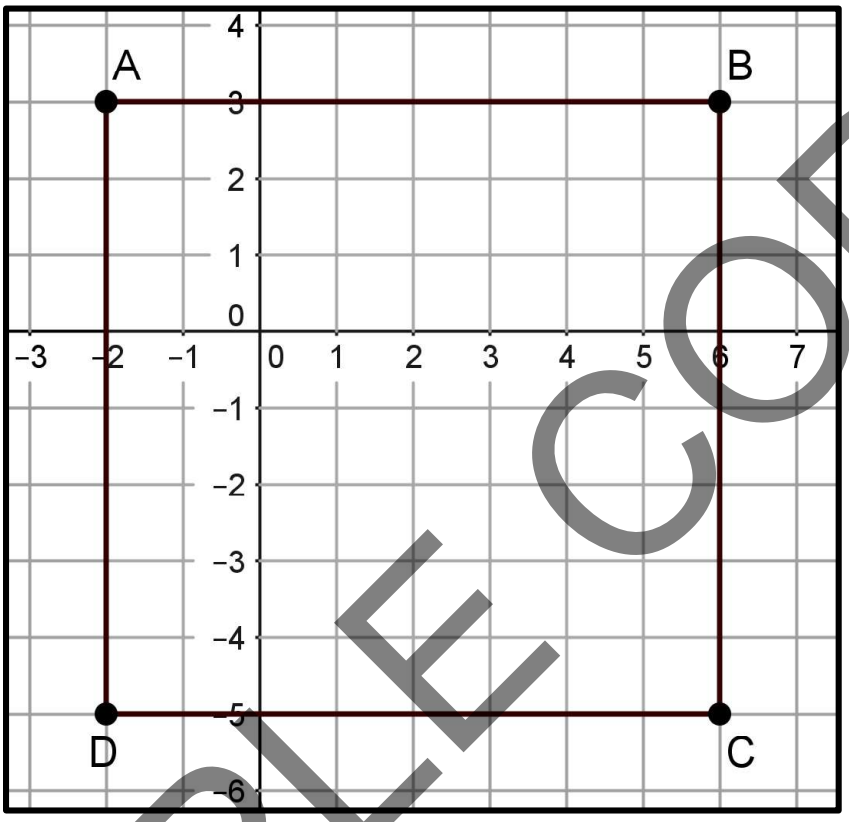
G $\frac{AB}{DE} = \frac{BC}{EF}$

H $\frac{AB}{BC} = \frac{BC}{EF}$

J $\frac{BC}{EF} = \frac{DE}{AB}$

Spiral 49

1 (8.3B)



Quadrilateral $A'B'C'D'$ is a dilation of Quadrilateral $ABCD$. The dilation is a reduction with a scale factor of $\frac{1}{2}$. If A' is located at (0, 1), where is B' located?

A (4, 1)

B (5, 0)

C ((0, -3)

D (5, 1)

2 (8.5H)

Which situation represents a proportional relationship?

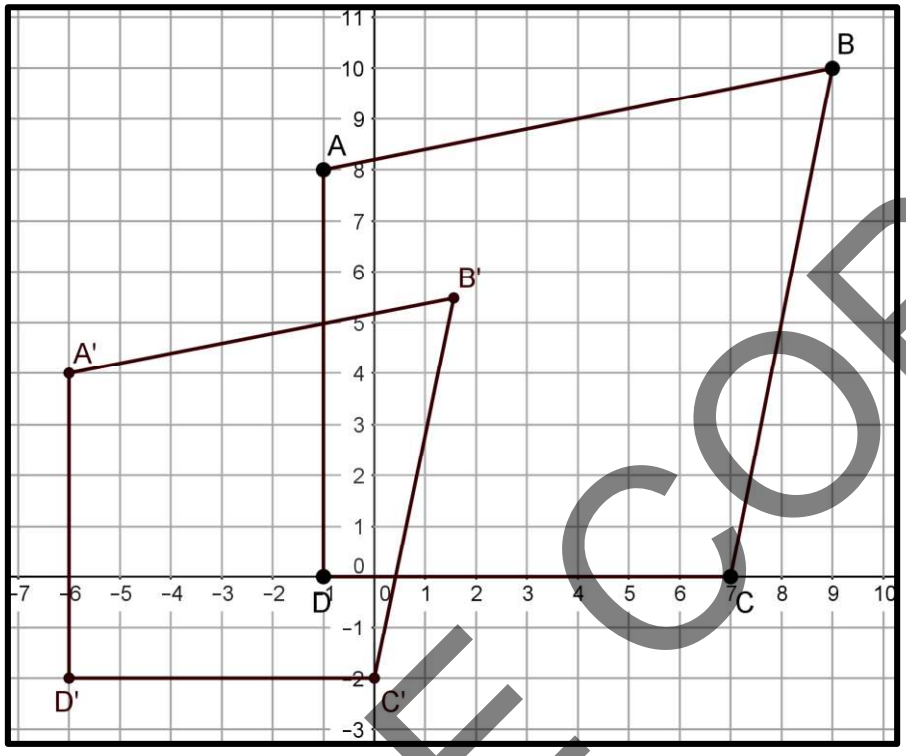
F The cost of purchasing hay for $26 a bale with a delivery charge of $30.

G The cost of purchasing baby chicks at $4.50 per chick.

H The cost of purchasing fencing at $29 a linear foot with an installation fee of $300.

J The cost of renting a backhoe for $79 per hour with a non-refundable deposit of $300.

3 (8.3B)



Quadrilateral $A'B'C'D'$ is a dilation of Quadrilateral $ABCD$. Which statement is **not** true?

A $m\angle A = m\angle A'$

B The perimeter of Quadrilateral $A'B'C'D'$ equals the perimeter of Quadrilateral $ABCD$ times the scale factor.

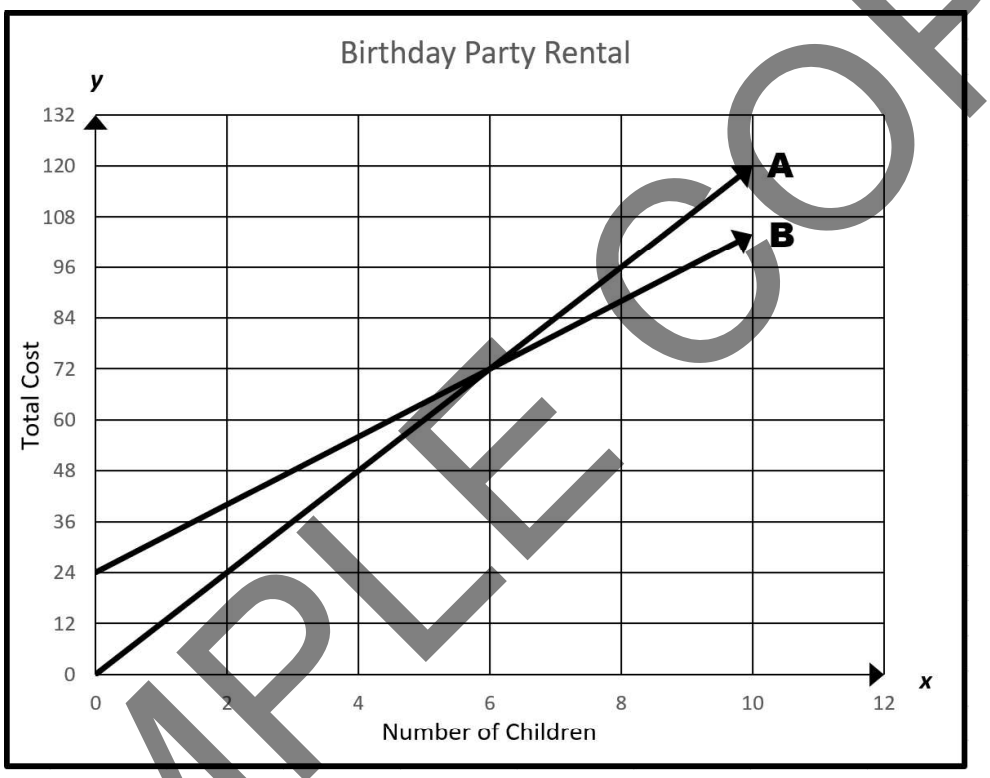
C The area of Quadrilateral $A'B'C'D'$ equals the area of Quadrilateral $ABCD$ times the scale factor.

D The length of $A'B'$ is equal to the length of AB times the scale factor.

Spiral 50

1 (8.9A)

The graph models the linear relationship between the number of children attending a birthday party and the total cost of hosting the party at two different pizza restaurants.



Based on the graph, which statement appears to be true?

F The rate for both rentals is the same for up to 10 children.

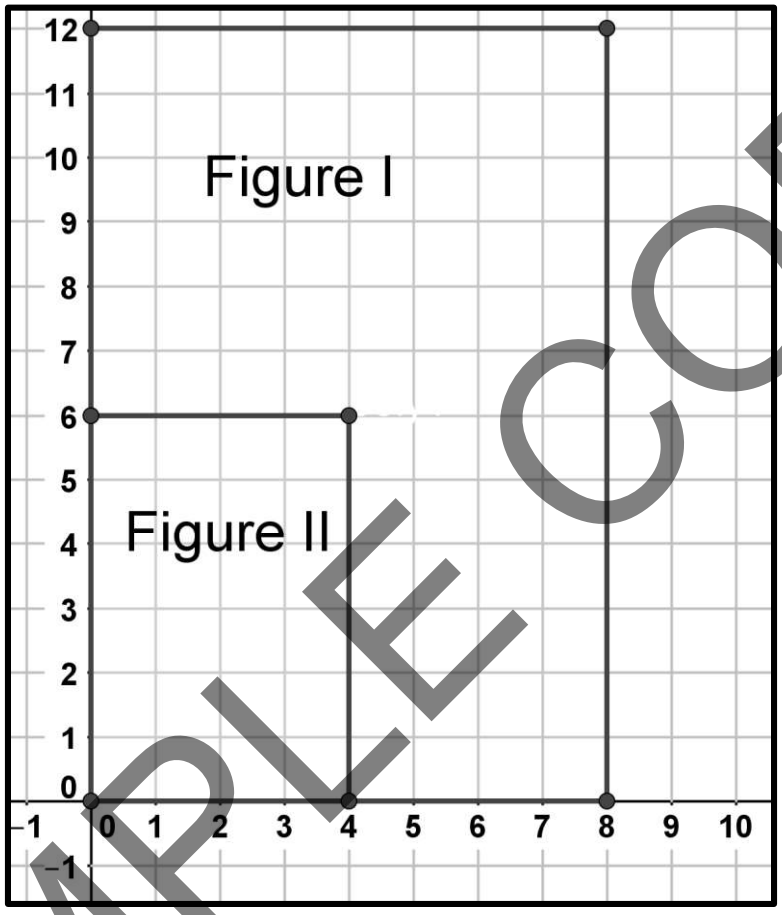
G For 6 children the rate for both rentals is $72.

H For 8 children the rate for both rentals is $96.

J For 8 children the rate for Rental A is $12 more than Rental B.

2 (8.3C)

Figure I was dilated with the origin as the center of dilation to create Figure II.



Which rule best represents the dilation applied to Figure I to create Figure II?

A $(x,y) \rightarrow (2x,2y)$

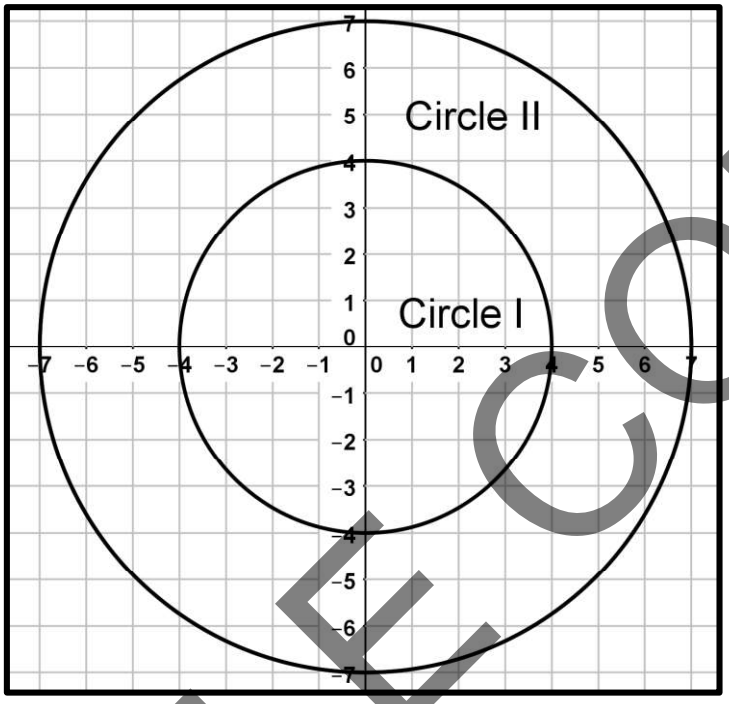
B $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

C $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

D $(x,y) \rightarrow (4x,4y)$

3 (8.3C)

Circle I was dilated with the origin as the center of dilation to create Circle II.



Which rule best represents the dilation applied to Circle I to create Circle II?

F $(x, y) \rightarrow (7x, 4y)$

G $(x, y) \rightarrow (\frac{7}{4}x, \frac{7}{4}y)$

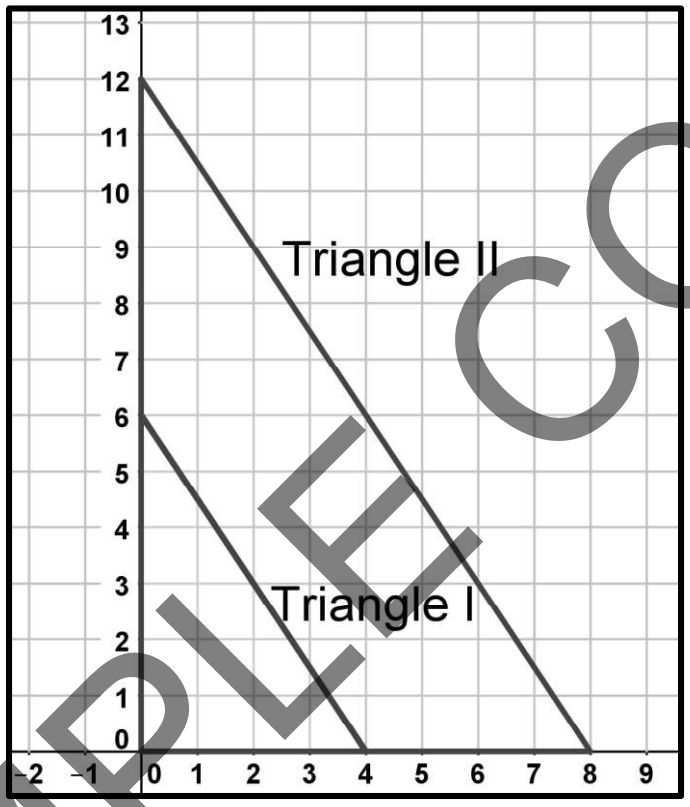
H $(x, y) \rightarrow (\frac{4}{7}x, \frac{4}{7}y)$

J $(x, y) \rightarrow (4x, 4y)$

Spiral 51

1 (8.3C)

Triangle I was dilated with the origin as the center of dilation to create Triangle II.



Which rule best represents the dilation applied to Triangle I to create Triangle II?

A $(x,y) \rightarrow (2x,2y)$

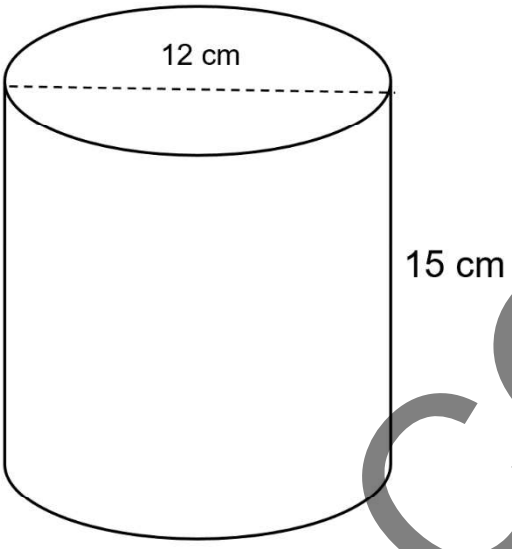
B $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

C $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

D $(x,y) \rightarrow (4x,4y)$

2 (8.6A)

A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V = Bh$, where B represents the area of the base of the cylinder. Which expression can be used to find the value of B, in square centimeters, for this cylinder?

F $\pi(6)^2$

G $\pi(15)^2$

H $2\pi(6)$

J $\pi(12)^2$

3 (8.2C)

To reach the moon and return, Astronauts aboard Apollo 11 travelled 1,533,791.74 km. How is this number written in scientific notation?

A 1533791.74 x 10^5

B 1.533,79174 x 10^5

C 1.53379174 x 10^6

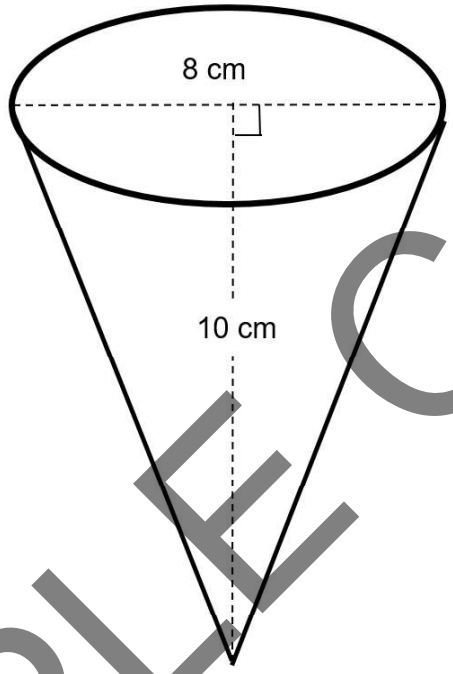
D 1.53379174 x 10^{-6}

SpiralEd Solutions

Spiral 52

1 (8.7A)

The height and diameter of an ice cream cone are shown.



Which measurement is closest to the volume of the cone in cubic centimeters?

F 167.47 cm^3

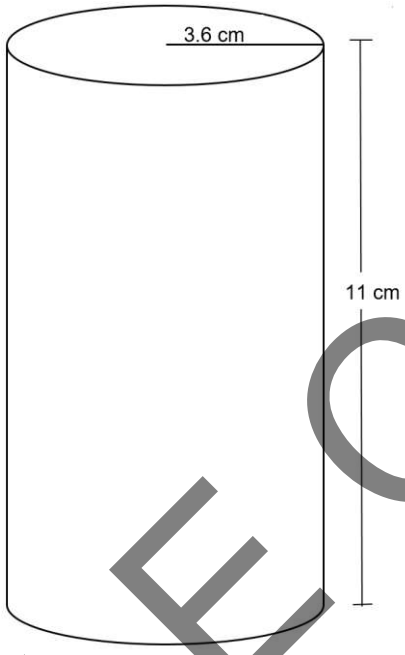
G 50.24 cm^3

H 669.87 cm^3

J 502.41 cm^3

2 (8.7A)

The height and radius of a cylinder are shown.



Which measurement is closest to the volume of the cylinder in cubic centimeters?

A 142.56 cm^3

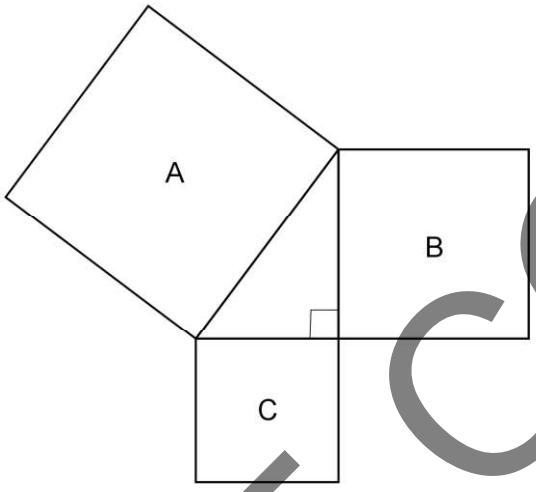
B 1367.78 cm^3

C 447.64 cm^3

D 1790.55 cm^3

3 (8.6C)

A student is given the diagram below and instructed to cover each square region with congruent square tiles without leaving gaps or overlapping any tiles.



Based on this activity, which statement is true?

F The number of square tiles used to cover Region A plus the number of tiles used to cover Region B will equal the number of square tiles used to cover Region C.

G The number of square tiles used to cover Region B minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region A.

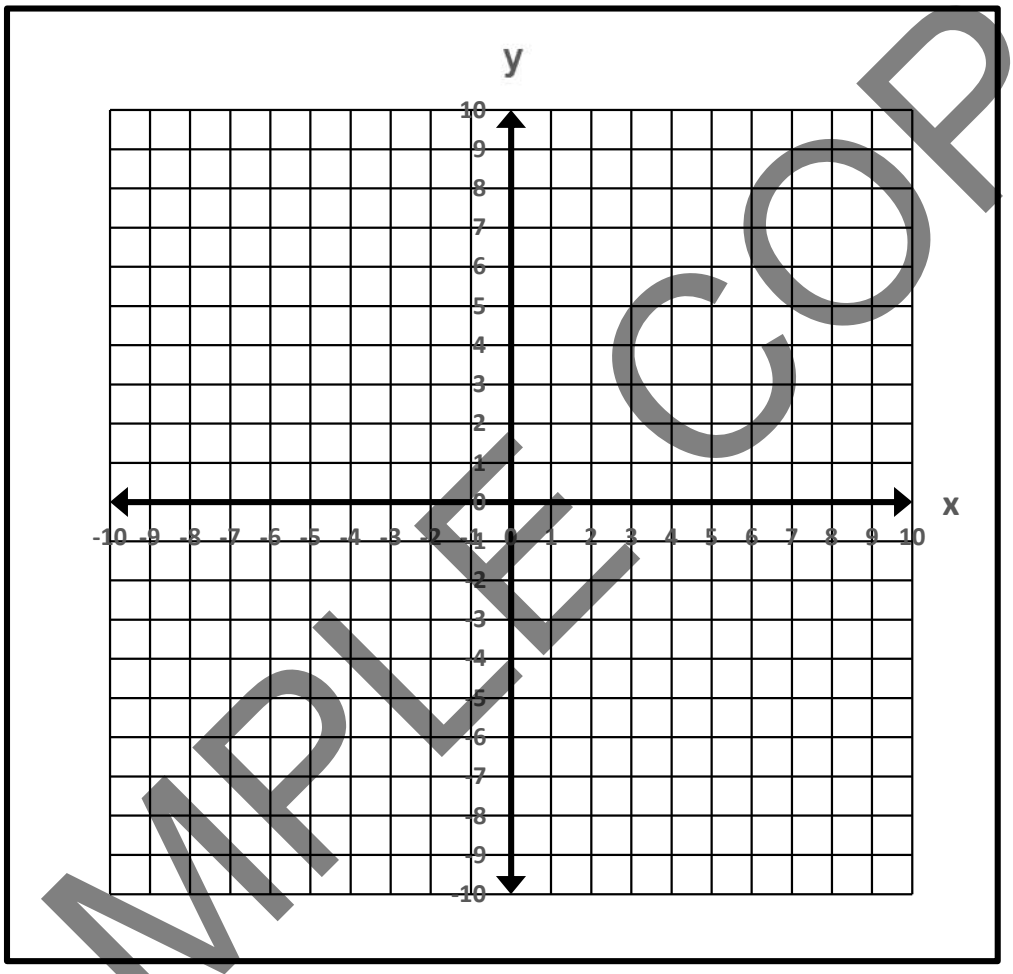
H The number of square tiles used to cover Region A plus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

J The number of square tiles used to cover Region A minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

Spiral 53

1 (8.7D)

Point *C* is located at (3,5) on a coordinate grid. Point *D* is located at (5,-2) on the same grid.



Which measurement is closest to the distance between point *C* and point *D* in units?

A 8 units

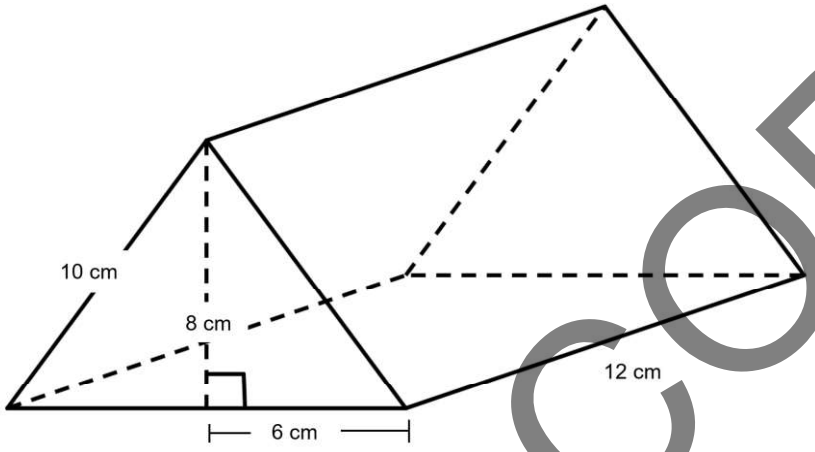
B 7 units

C 9 units

D 6 units

2 (8.7B)

A triangular prism and its dimensions are shown in the diagram.



Which equation can be used to determine the total surface area of the prism?

F $S = (12 + 10 + 10) \bullet 12$

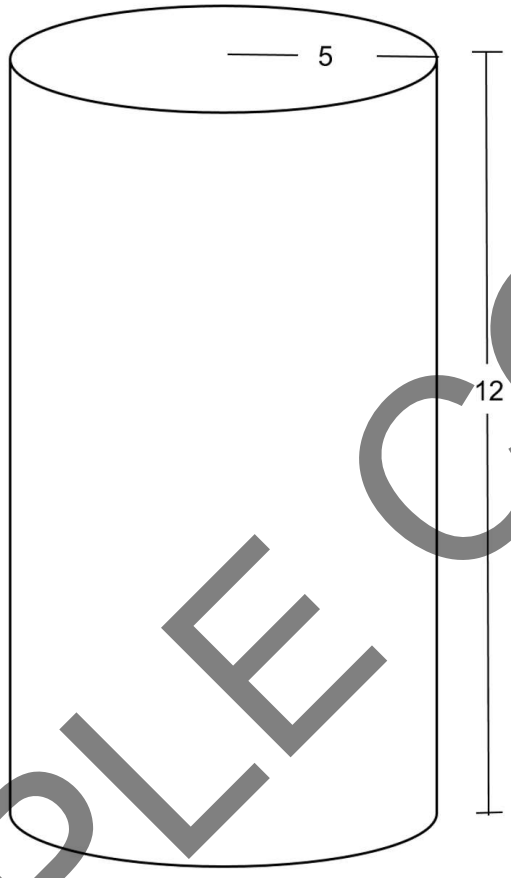
G $S = (12 + 10) \bullet 12$

H $S = [(12 + 10 + 10) \bullet 12] + 2(6 \bullet 8)$

J $S = [(12 + 10 + 10) \bullet 12] + \frac{1}{2}(6 \bullet 8)$

3 (8.7B)

A cylinder and its dimensions are shown in the diagram.



Which measurement is closest to the total surface area of the cylinder in square centimeters to the nearest tenth?

A 157 cm^2

B 376.8 cm^2

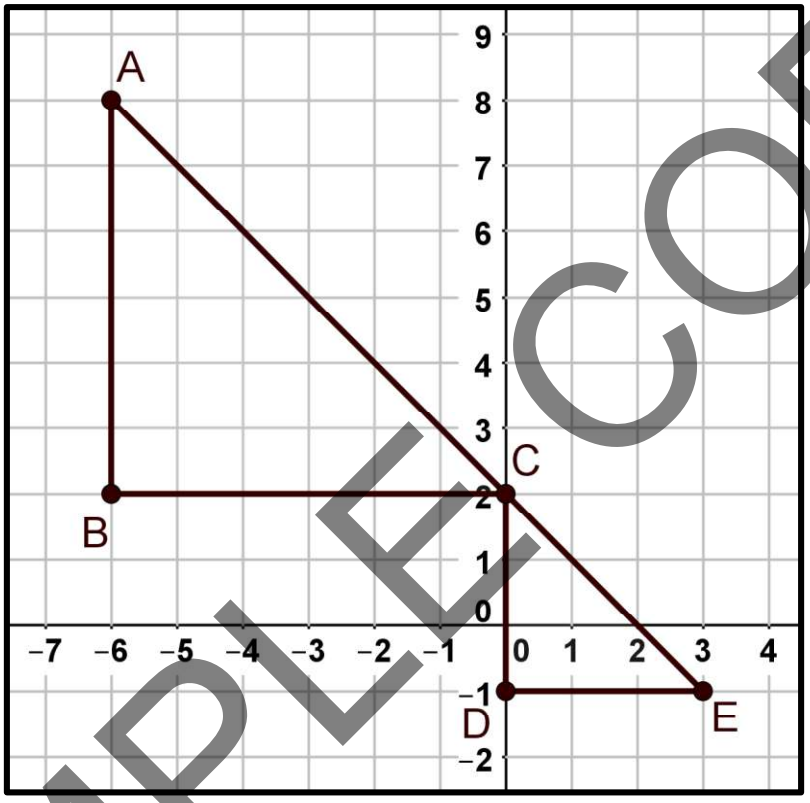
C 533.8 cm^2

D 189 cm^2

Spiral 54

1 (8.4A)

Triangles ABC and CDE are similar right triangles.



Which proportion can be used to show that the slope of $\overline{AC}$ is equal to the slope of $\overline{CE}$?

F $\dfrac{0-(-6)}{8-2}=\dfrac{0-3}{2-(-1)}$

G $\dfrac{-6-0}{2-(-1)}=\dfrac{0-3}{8-2}$

H $\dfrac{8-2}{0-3}=\dfrac{2-(-1)}{6-0}$

J $\dfrac{8-2}{-6-0}=\dfrac{2-(-1)}{0-3}$

2 (8.8A)

Rental Company A charges $50 per hour plus a delivery fee of $400 to rent a small bulldozer. Rental Company B charges $100 per hour with free delivery to rent the same equipment. Which equation can be used to find h, the number of hours rental, so that the total charge at Rental Company A is equal to the total charge at Rental Company B?

A $50h - 400 = 100h$

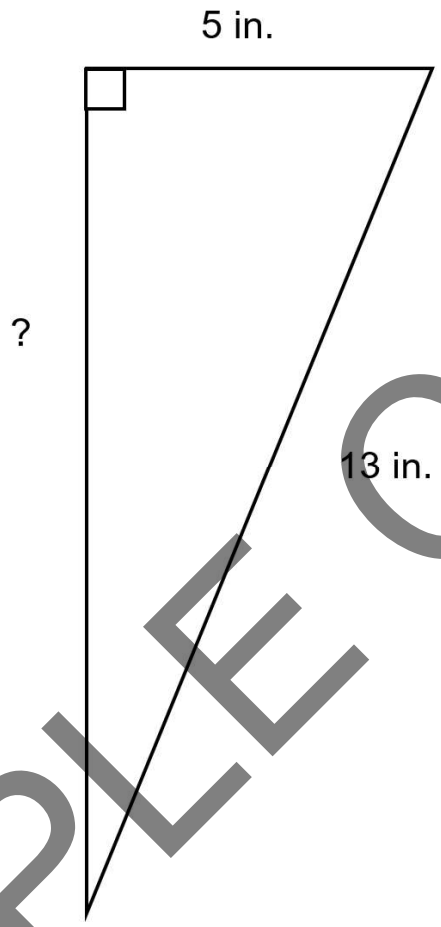
B $50h + 400 = 100h$

C $50h = 100h + 400$

D $50h = 400h - 100$

3 (8.7C)

The diagram below shows a right triangle.



Which measurement is closest to the length of the missing side in inches?

F 13 in.

G 14 in.

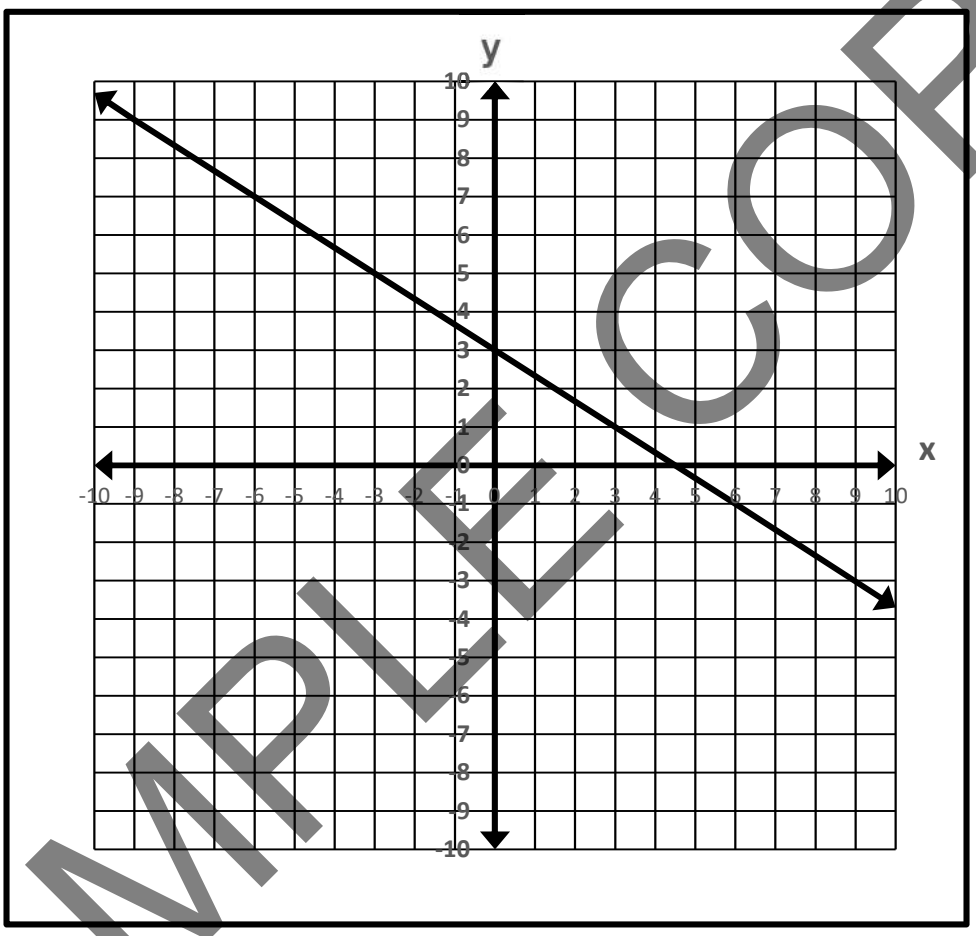
H 11 in.

J 12 in.

Spiral 55

1 (8.5I)

Which function is represented by the graph?



A $y = -\frac{2}{3}x - 3$

B $y = \frac{2}{3}x - 3$

C $y = \frac{2}{3}x + 3$

D $y = -\frac{2}{3}x + 3$

2 (8.5I)

An athletic trainer determines that the number of calories needed after a workout depends on a base amount of 200 calories plus 53 calories for each minute of weightlifting. Which equation represents the number of post workout calories required (C) as a function of the number of minutes of weightlifting (m) completed?

F $C = 200m - 53$

G $C = 53m + 200$

H $C = 53m - 200$

J $C = \frac{53m}{200}$

3 (8.8B)

Which of the following problems can be solved by using the inequality, $72.5d + 125 > 57.2d + 250$, where d represents the number of days?

A To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $72.50 per day. To rent the same car, Company B charges $57.20 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, d, for the total cost of renting from Company B to be less than the total cost of renting from Company A.

B To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $72.50 per day. To rent the same car, Company B charges $57.20 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, d, for the total cost of renting from Company B to be more than the total cost of renting from Company A.

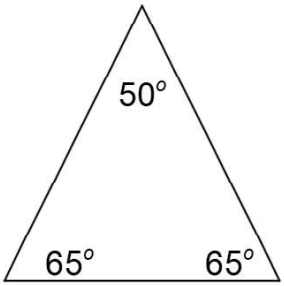
C To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $57.20 per day. To rent the same car, Company B charges $72.50 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, d, for the total cost of renting from Company B to be less than the total cost of renting from Company A.

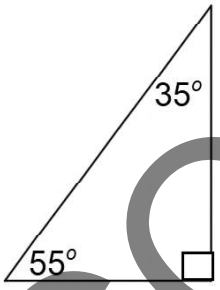
D To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $57.20 per day. To rent the same car, Company B charges $72.50 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, d, for the total cost of renting from Company B to be more than the total cost of renting from Company A.

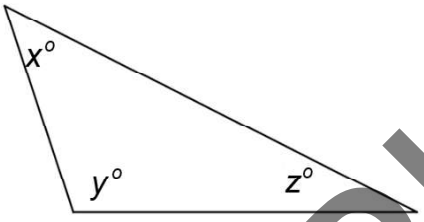
Spiral 56

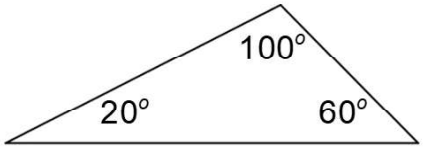
1 (8.8D)

Four triangles are shown.









Based on these triangles, which statement is true?

F y = x + z, because 90 = 55 + 35.

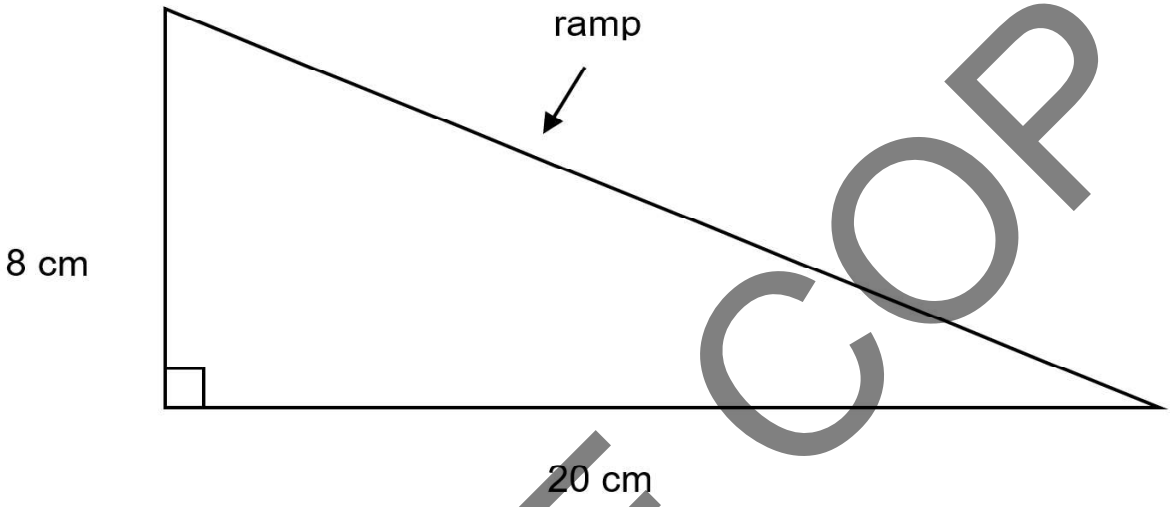
G $x + y + z = 180$, because 65 + 65 + 50 = 180 and 20 + 60 + 100 = 180 and 35 + 55 + 90 = 180.

H x + y = 90, because 55 + 35 = 90.

J y = (x – z) ÷ 2, because (100 – 60) ÷ 2 = 20.

2 (8.7C)

In science class, a ramp is constructed to test the distance a toy car will travel under different conditions.



Which measurement is closest to the length of the ramp in centimeters?

A 18.3 cm **B** 21.5 cm

C 20.2 cm **D** 18.2 cm

3 (8.8C)

If $7 + 2x \geq 7x - 3$, what values of x makes the inequality true?

F $x \leq 6$ **G** $x \geq 2$

H $x \geq 6$ **J** $x \leq 2$

SpiralEd Solutions

Spiral 57

1 (8.8C)

Wedding Venue A charges $25 per guest plus a rental fee of $1000. Wedding Venue B charges $45 per guest plus a rental fee of $800. Find the number of guests, *g*, so that the total charge at Wedding Venue A is equal to the total charge at Wedding Venue B?

A 12

B 18

C 10

D 8

2 (8.10C)

Triangle *ABC* was rotated 90^0 clockwise. Which rule describes the rotation that was applied to triangle *ABC* to create triangle $A'B'C'$?

F $(x,y) \rightarrow (x,-y)$

G $(x,y) \rightarrow (-x,-y)$

H $(x,y) \rightarrow (-x,y)$

J $(x,y) \rightarrow (y,-x)$

3 (8.5A)

Which table contains only corresponding x-values and y-values where the value of y is the quotient of x and 2?

A

x	y
3	6
5	10
12	24
16	32

B

x	y
3	1.5
5	2.5
12	6
16	8

C

x	y
3	5
5	7
12	14
16	18

D

x	y
3	1
5	3
12	10
16	14

SpiralEd Solutions

Spiral 58

1 (8.10C)

Triangle ABC was translated 2 units to the left and 3 units down. Which rule describes the translation that was applied to triangle ABC to create triangle $A'B'C'$?

F $(x, y) \rightarrow (x + 3, y + 2)$

G $(x, y) \rightarrow (x - 3, y + 2)$

H $(x, y) \rightarrow (x - 2, y + 3)$

J $(x, y) \rightarrow (x - 2, y - 3)$

2 (8.10C)

Triangle ABC was reflected over the y-axis. Which rule describes the reflection that was applied to triangle ABC to create triangle $A'B'C'$?

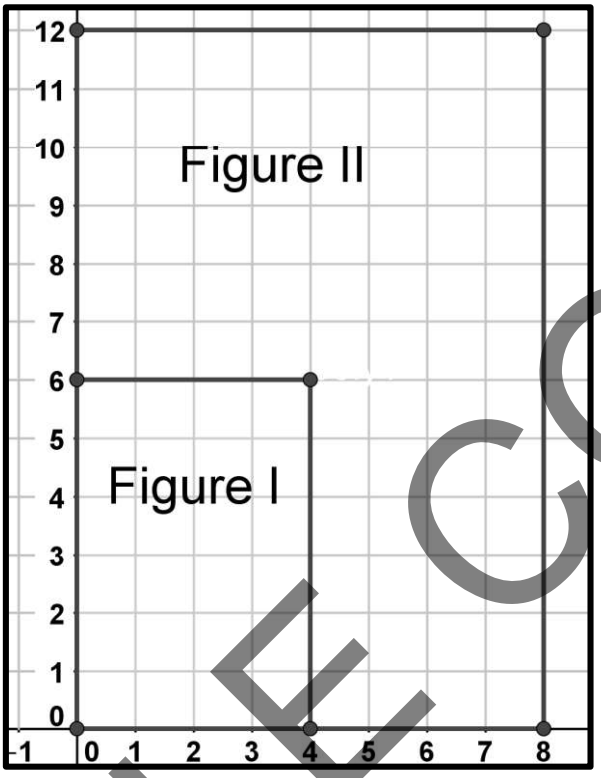
A $(x, y) \rightarrow (x, -y)$

B $(x, y) \rightarrow (-x, -y)$

C $(x, y) \rightarrow (-x, y)$

D $(x, y) \rightarrow (y, -x)$

3 (8.3C) Figure I was dilated with the origin as the center of dilation to create Figure II.



Which rule best represents the dilation applied to Figure I to create Figure II?

F $(x,y) \rightarrow (2x,2y)$

G $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

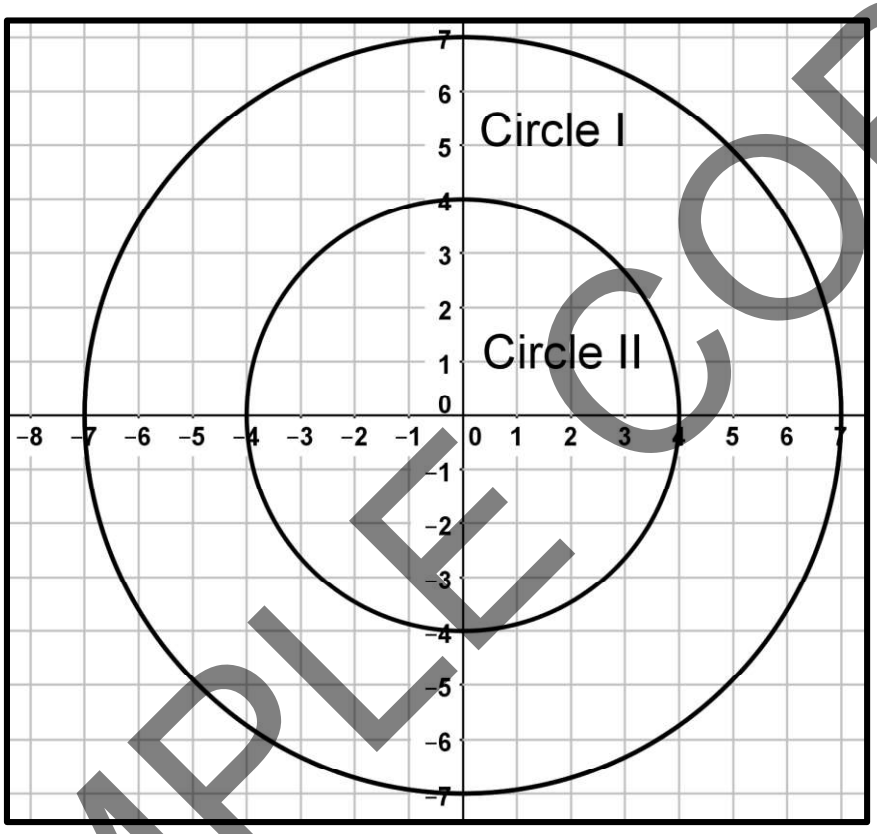
H $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

J $(x,y) \rightarrow (4x,4y)$

Spiral 59

1 (8.3C)

Circle I was dilated with the origin as the center of dilation to create Circle II.



Which rule best represents the dilation applied to Circle I to create Circle II?

A $(x,y) \rightarrow (7x,4y)$

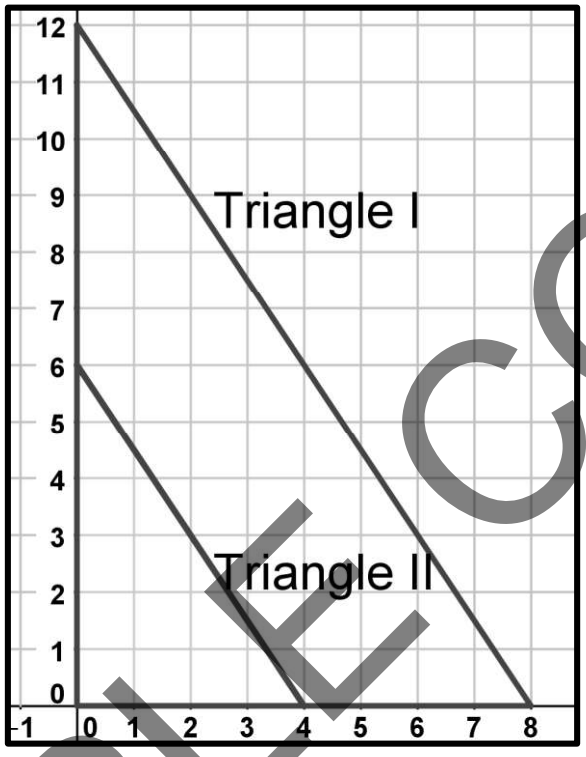
B $(x,y) \rightarrow (\frac{7}{4}x,\frac{7}{4}y)$

C $(x,y) \rightarrow (\frac{4}{7}x,\frac{4}{7}y)$

D $(x,y) \rightarrow (4x,4y)$

2 (8.3C)

Triangle I was dilated with the origin as the center of dilation to create Triangle II.



Which rule best represents the dilation applied to Triangle I to create Triangle II?

F $(x,y) \rightarrow (2x,2y)$

G $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

H $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

J $(x,y) \rightarrow (4x,4y)$

3 (8.2D)

A teacher takes a grade based on the number of questions a student completed correctly out of the number of questions the student completed.

	Number Correct/Number Completed
Student 1	0.75
Student 2	61.5%
Student 3	$\frac{7}{10}$
Student 4	$\frac{9}{15}$

Which list shows student grades in order from least to greatest?

A Student 4, Student 2, Student 3, Student 1

B Student 1, Student 3, Student 4, Student 2

C Student 2, Student 1, Student 4, Student 3

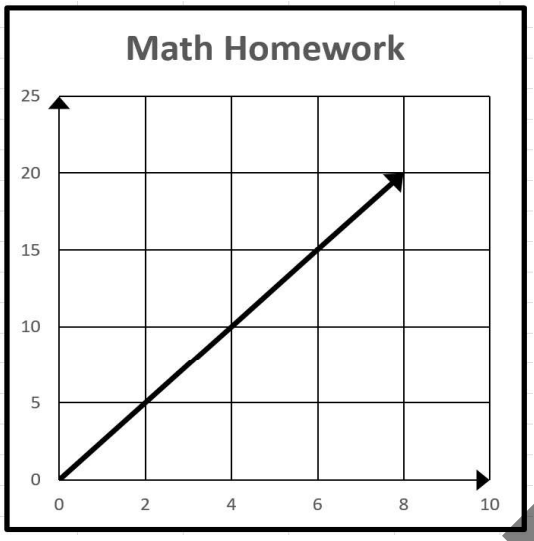
D Student 3, Student 4, Student 2, Student 1

Spiral 60

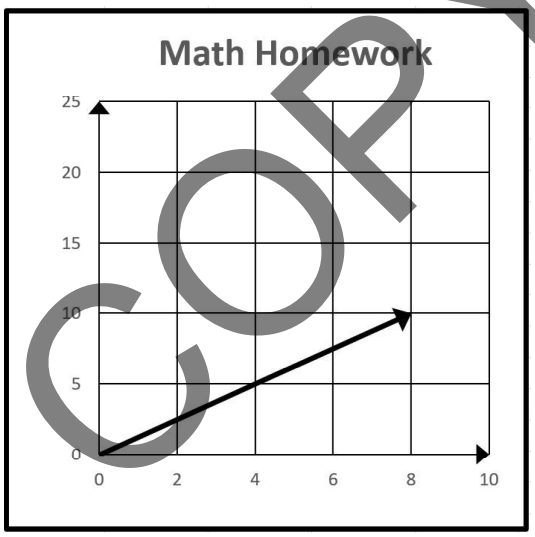
1 (8.4B)

A student completes 5 math homework problems every 2 minutes. Which graph models a relationship with the same unit rate?

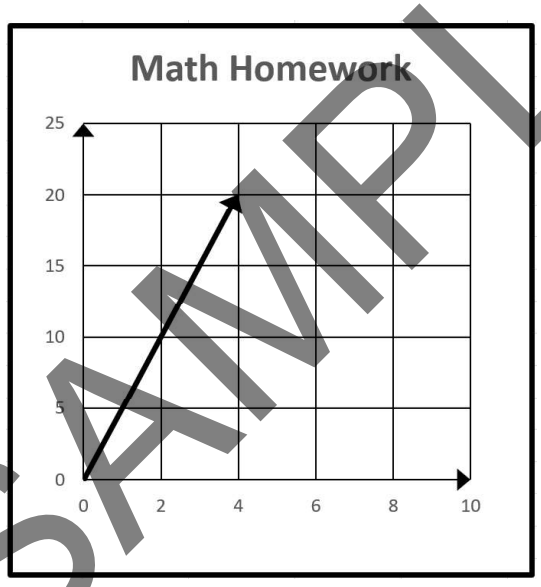
F



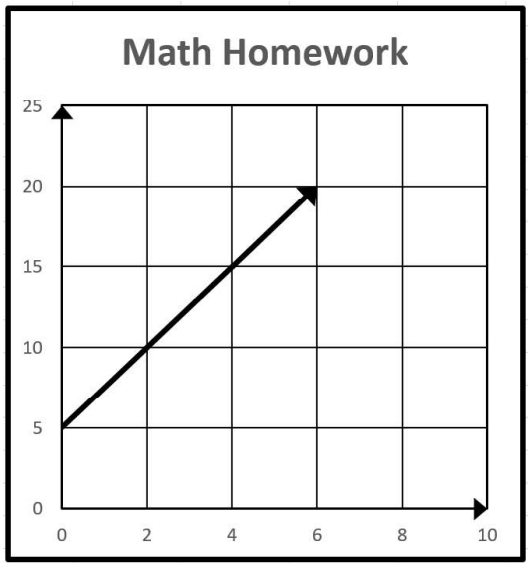
G



H



J



2 (8.4C)

Josh has a savings account that he started with the money his aunt gave him for graduation. The table shows the amount of money Josh had at the end of *x* months.

Josh's Savings Account

Number of Months, x	Amount of Savings, y
1	$75
4	$150
8	$250
10	$300
12	$350

How much money did Jason's grandmother give him to open the account?

A $125

B $50

C $75

D $150

3 (8.5B)

Which table contains only corresponding x-values and y-values where the value of y is one less than the quotient of x and 2?

F

x	y
3	5
5	9
12	23
16	31

G

x	y
3	1.5
5	2.5
12	6
16	8

H

x	y
3	0.5
5	1.5
12	5
16	7

J

x	y
3	1
5	3
12	10
16	14

SpiralEd Solutions

Spiral 61

1 (8.2A)

Which set contains only rational numbers?

A $\{-4, 5.21783, \frac{6}{3}, 1.\overline{4}\}$.

B $\{-2, \frac{7}{3}, \pi, 1.2\}$

C $\{\frac{7}{3}, \sqrt{2}, 1.\overline{2}, 3.566672\}$

D $\{-4, -5, -\frac{8}{2}, \sqrt{3}\}$

2 (8.10D)

An artist painted the same design on two rectangular canvases that are similar in shape. Each dimension of the larger canvas is 4.1 times the corresponding dimension of the smaller canvas. Which statement is true?

F The area of the larger canvas is 4.1 times the area of the smaller canvas.

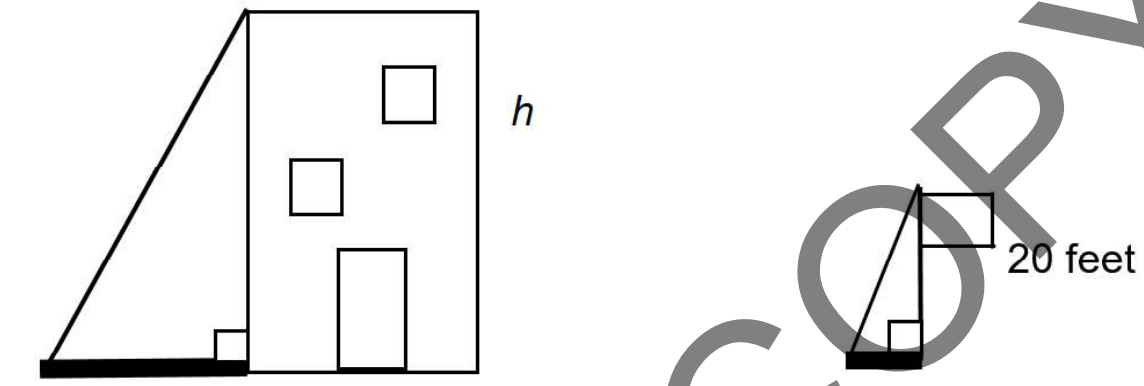
G The area of the larger canvas is 8.2 times the area of the smaller canvas.

H The perimeter of the larger canvas is 16.81 times the perimeter of the smaller canvas.

J The perimeter of the larger canvas is 4.1 times the perimeter of the smaller canvas.

3 (8.3A)

A building casts a 48-foot shadow on the ground, while at the same time a 20-foot flagpole casts a 24-foot shadow.



Not drawn to scale.

Which proportion can be used to find h, the height of the building in feet?

A $\frac{20}{h} = \frac{48}{24}$

B $\frac{20}{h} = \frac{24}{48}$

C $\frac{20}{24} = \frac{48}{h}$

D $\frac{h}{20} = \frac{24}{48}$

Spiral 62

1 (8.5I)

Which function is represented by the set of ordered pairs?

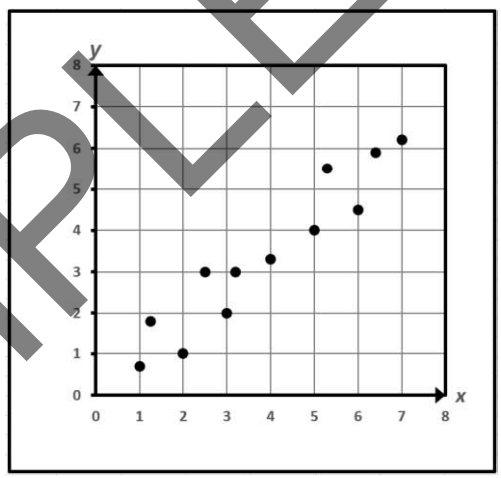
{(-5,-7), (-3,-3), (0,3), (3,9), (5,13)}

F $y = 2x - 3$ **G** $y = -2x + 3$

H $y = -2x - 3$ **J** $y = 2x + 3$

2 (8.5C)

Which statement about the scatterplot is correct?



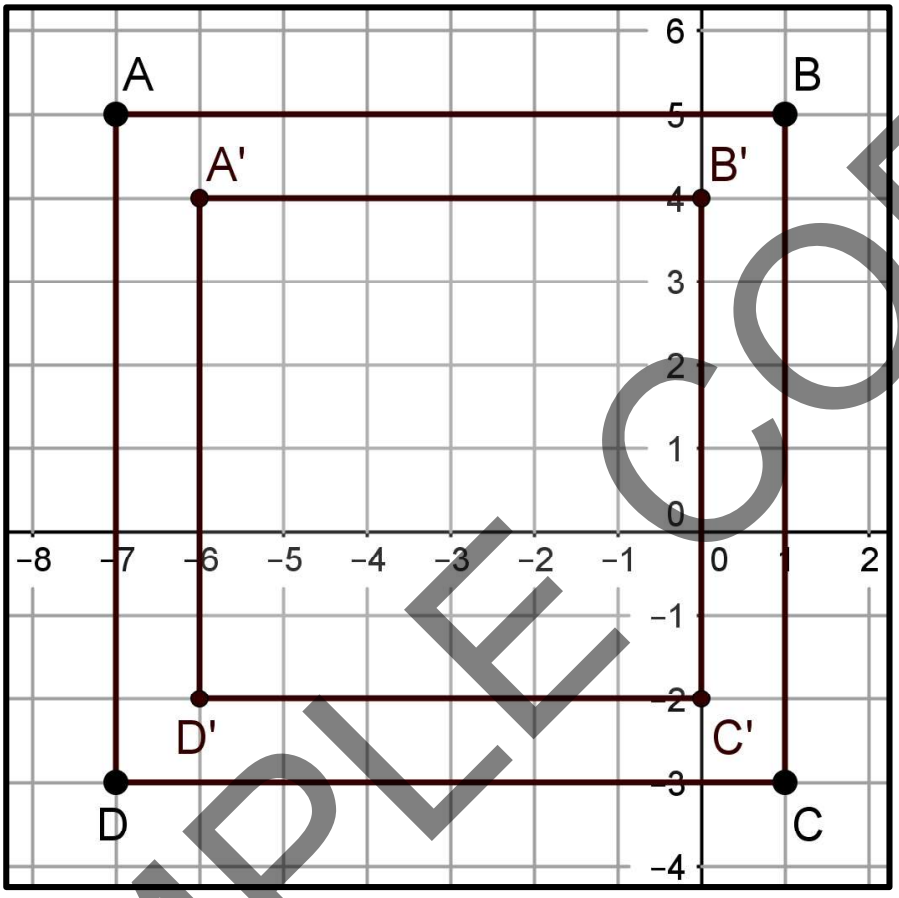
A The scatterplot suggests a linear relationship between x and y.

B The scatterplot does not suggest a linear relationship between x and y.

C The scatterplot suggests that as x increases, y decreases.

D The scatterplot suggests a negative relationship between x and y.

3 (8.4B)



Quadrilateral $A'B'C'D'$ is a dilation of Quadrilateral $ABCD$. What is the scale factor of the dilation?

F $\frac{7}{8}$

G $\frac{4}{3}$

H 2

J $\frac{3}{4}$

SpiralEd Solutions

Spiral 63

1 (8.5A)

Which equation represents a function that contains only corresponding x-values and y-values where the value of y is the product of 0.4 and x?

A $y = \frac{x}{0.4}$

B $y = x + 0.4$

C $y = 0.4x$

D $y = x + 0.4$

2 (8.5H)

Which statement is true?

F The cost of buying t-shirts at \$12 per shirt plus a one-time set up fee is proportional, because the function can be represented in the form $y = kx$.

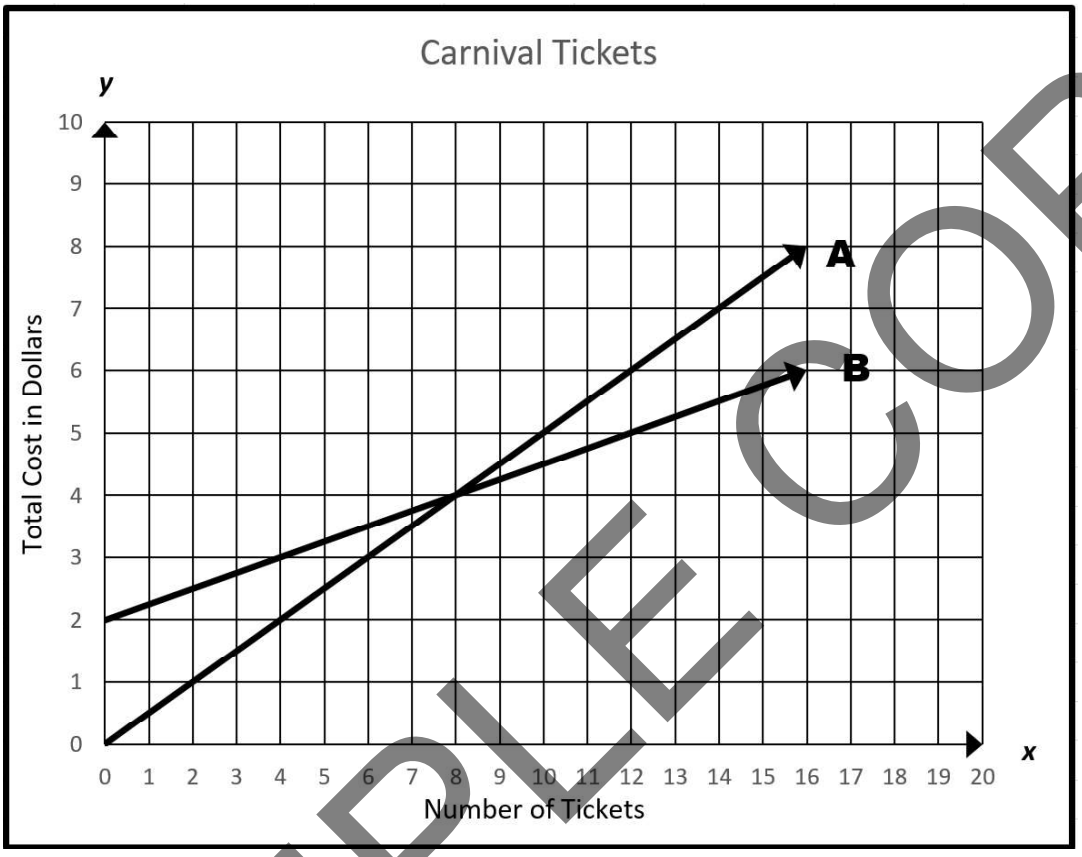
G The cost of buying t-shirts at \$12 per shirt plus a one-time set up fee is not proportional, because the function cannot be represented in the form $y = kx$.

H The cost of buying t-shirts at \$12 per shirt plus a one-time set up fee is proportional, because the function cannot be represented in the form $y = kx$.

J The cost of buying t-shirts at \$12 per shirt plus a one-time set up fee is not proportional, because the function can be represented in the form $y = kx$.

3 (8.9A)

The graph models the linear relationship between the number of tickets purchased and the total cost of admission for two carnivals.



Based on the graph, which statement appears to be true?

A The cost for admission at both carnivals is $5.00 with the purchase of 8 tickets.

B The cost for admission at Carnival B is less than admission for Carnival A for up to 4 tickets.

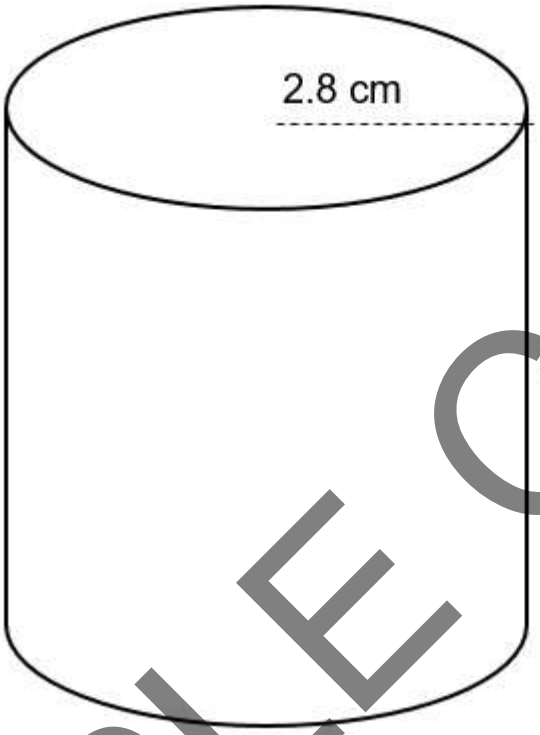
C The cost of admission to Carnival A is $2.00 less than the cost of admission to Carnival B for 16 tickets.

D The cost of admission at both carnivals is $4.00 with the purchase of 8 tickets.

Spiral 64

1 (8.6A)

A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V = Bh$, where B represents the area of the base of the cylinder. Which expression can be used to find the value of V , in cubic centimeters, for this cylinder?

F $8.2\pi(2.8)^2$

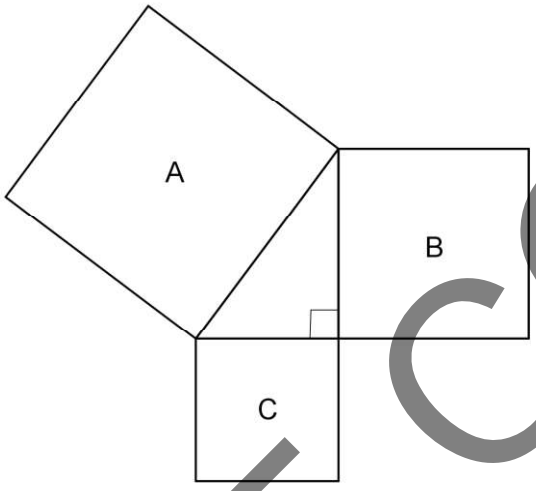
G $2.8\pi(8.2)^2$

H $16.4\pi(2.8)$

J $5.6\pi(8.2)^2$

2 (8.6C)

A student is given the diagram below and instructed to cover each square region with congruent square tiles without leaving gaps or overlapping any tiles.



Based on this activity, which statement is true?

A The number of square tiles used to cover Region A plus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

B The number of square tiles used to cover Region B minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region A.

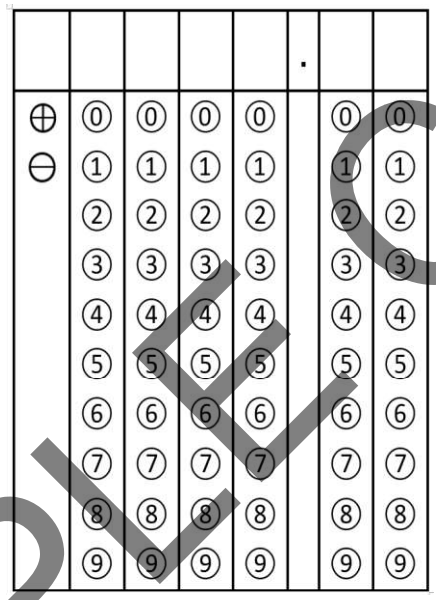
C The number of square tiles used to cover Region A minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

D The number of square tiles used to cover Region A minus the number of tiles used to cover Region C will equal the number of square tiles used to cover the center right triangle.

3 (8.5E)

The value of y varies directly with x. When $y = \frac{1}{2}, x = \frac{5}{8}$. What is the value of y when $x = 32$?

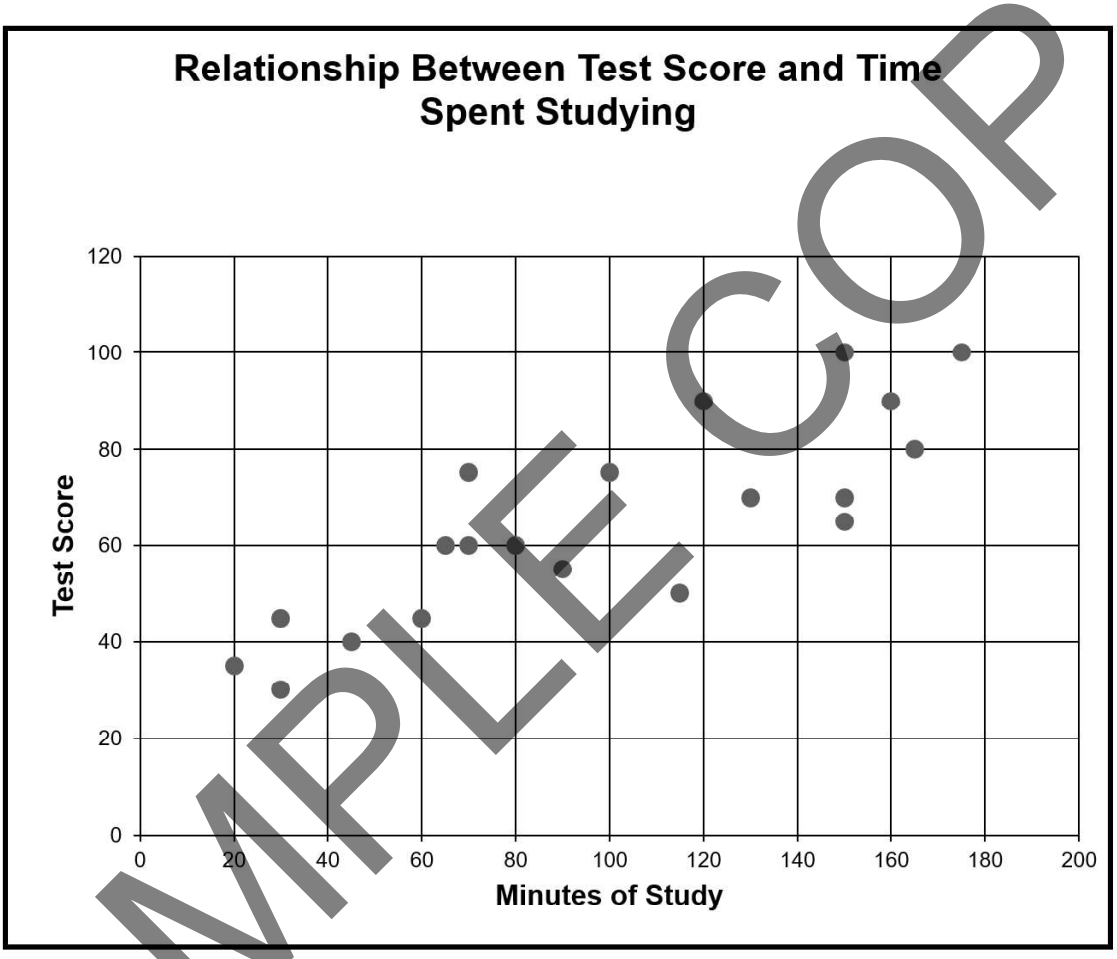
Record your answer and fill in the bubbles. Be sure to use the correct place value.



Spiral 65

1 (8.5D)

The graph shows the relationship between student test scores and the amount of time spent studying.



Based on this information predict the score for a student who spent 50 minutes studying for the test.

A 80

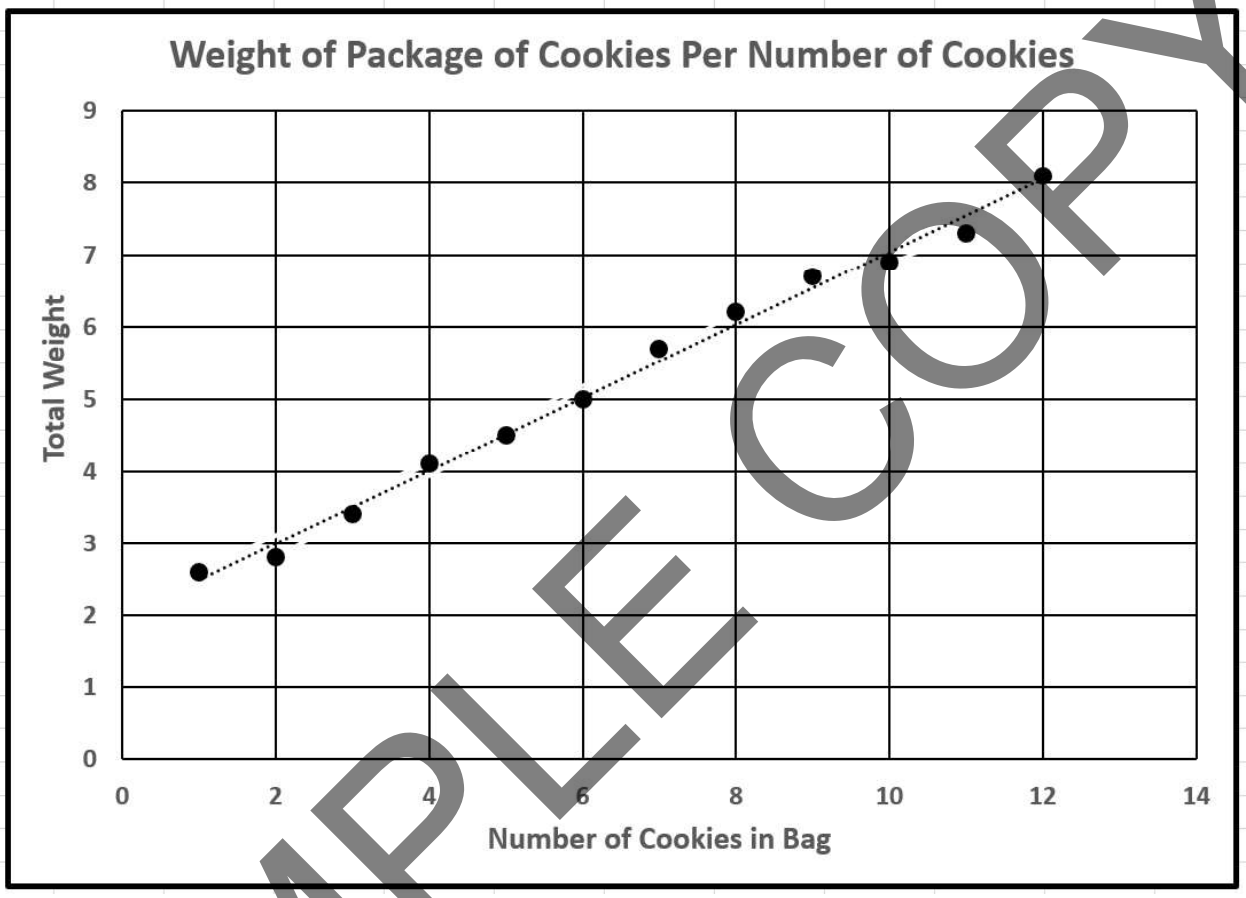
B 50

C 20

D 60

2 (8.5D)

The graph shows the relationship between the number of cookies in a package and the total weight of the package in ounces.



Estimate the weight of a package containing 14 cookies.

F 8 ounces

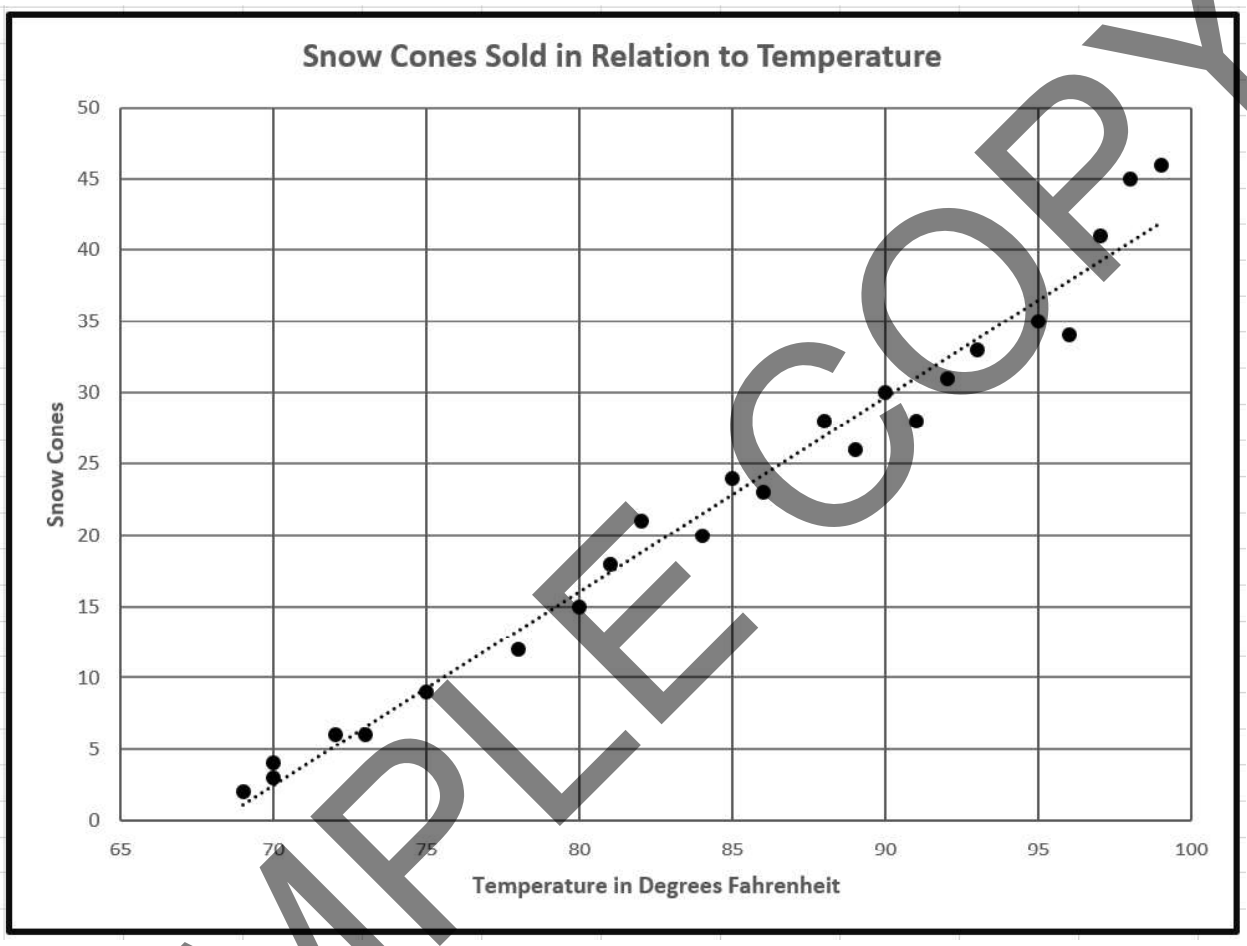
G 6 ounces

H 9 ounces

J 12 ounces

3 (8.5D)

The graph shows the number of snow cones sold in relation to the daily high temperature.



Estimate the number of snow cones sold on a day when the temperature reaches a high of 93 degrees.

A 32

B 35

C 41

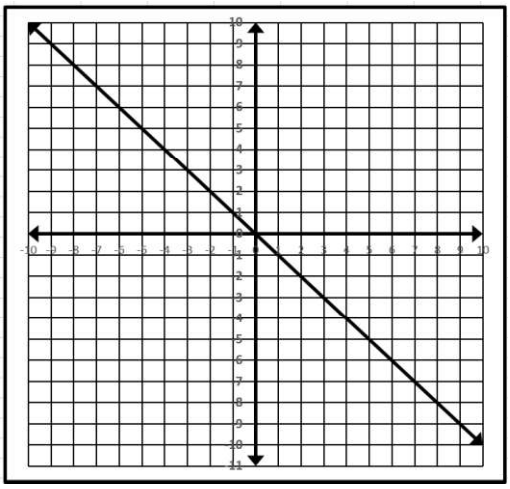
D 35

Spiral 66

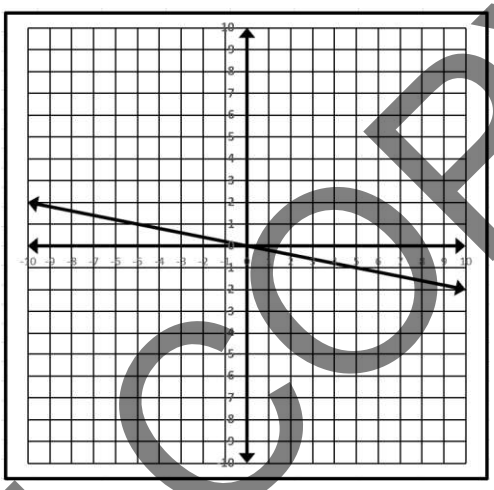
1 (8.5F)

Which graph does **not** show a proportional relationship between x and y ?

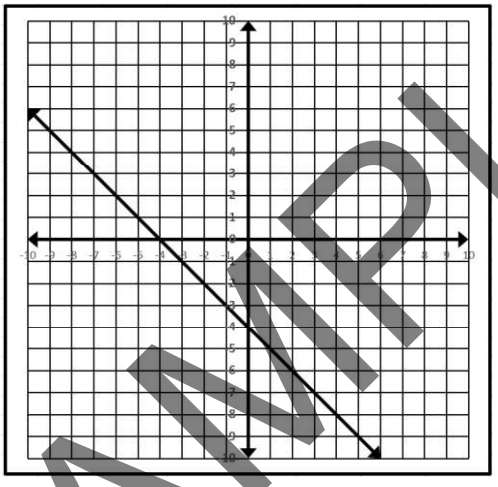
F



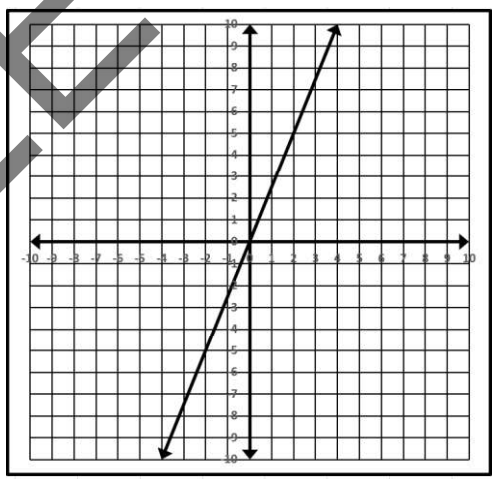
G



H

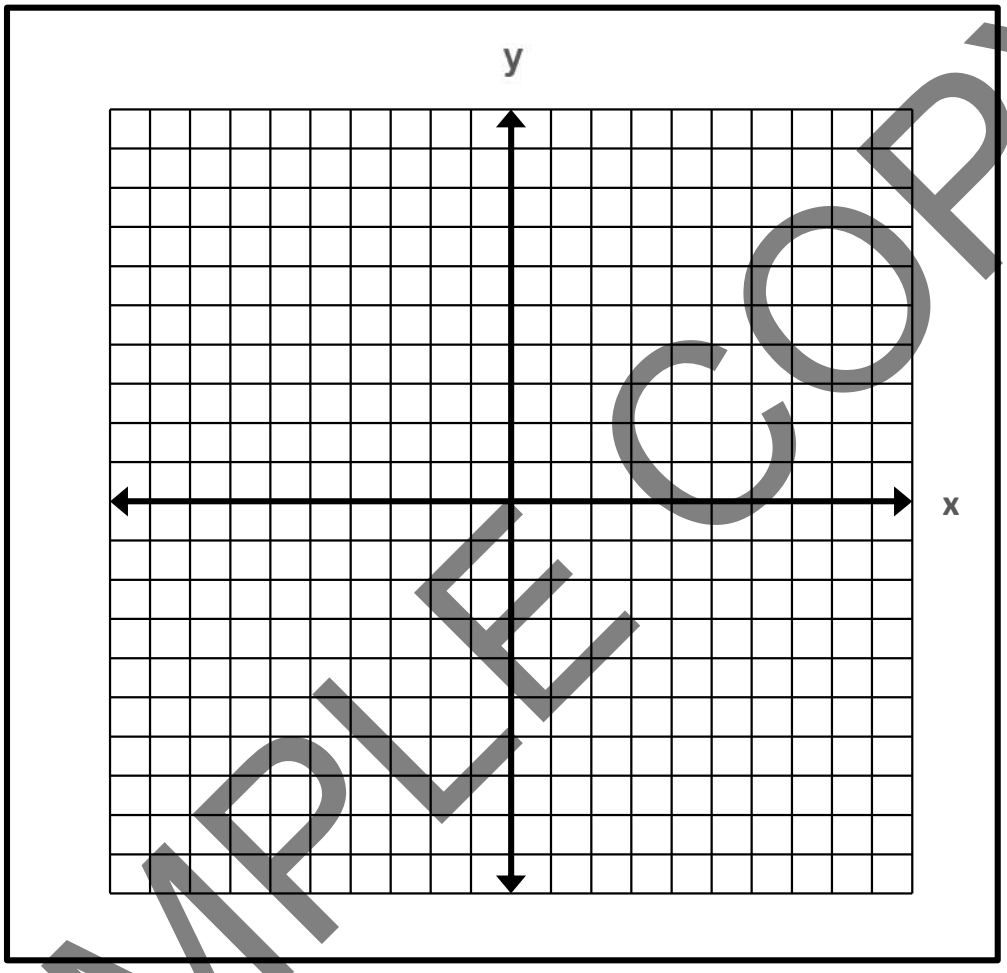


J



2 (8.7D)

Point *E* is located at (-2,-7) on a coordinate grid. Point *F* is located at (0,1) on the same grid.



Which measurement is closest to the distance between point *E* and point *F* in units?

A 8 units

B 7 units

C 9 units

D 6 units

3 (8.8A)

A birthday party at Party Place A costs $8 per child plus a cleaning fee of $72. A birthday party at Party Place B costs $12 per child. Which equation can be used to find *c*, the number of children attending the party, so that the total charge at Party Place A is greater than the total charge at Party Place B?

F $8c + 72 \geq 12c$

G $8c + 72 < 12c$

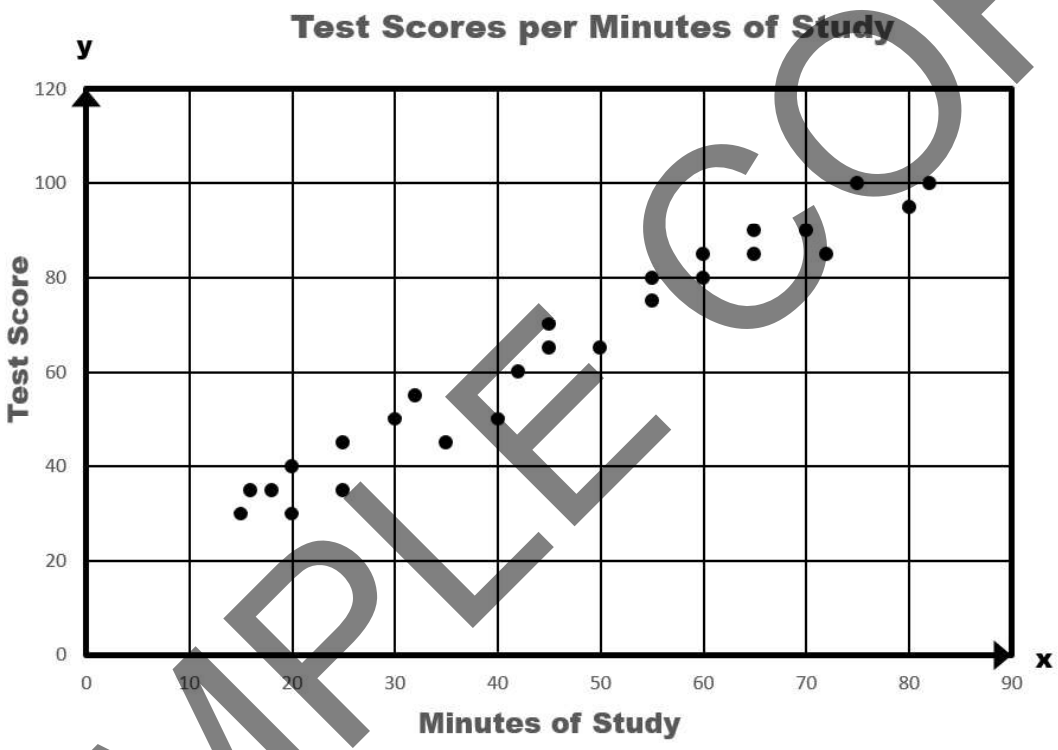
H $12c + 8c > 72$

J $8c + 72 > 12c$

Spiral 67

1 (8.11A)

A teacher kept a log of the amount of time students spent studying for a test and their score on the test. The scatterplot below shows the time spent studying and score for each student.



Which conclusion is best supported by the scatterplot?

A As the length of time spent studying increases, the score increases.

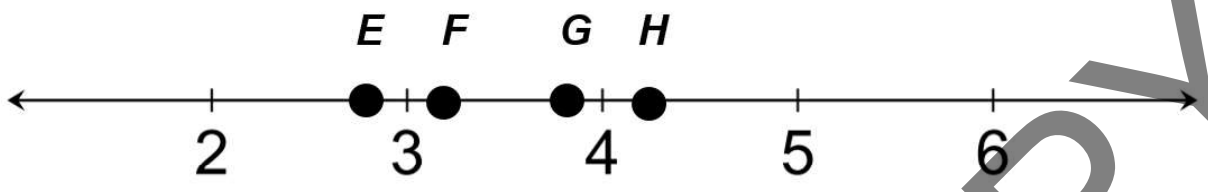
B As the length of time spent studying increases, the score remains the same.

C As the length of time spent studying increases, the score decreases.

D There is no relationship between the length of time spent studying and the score.

2 (8.2B)

Which point on the number line best represents the location of $\sqrt{18}$?



F Point *E*

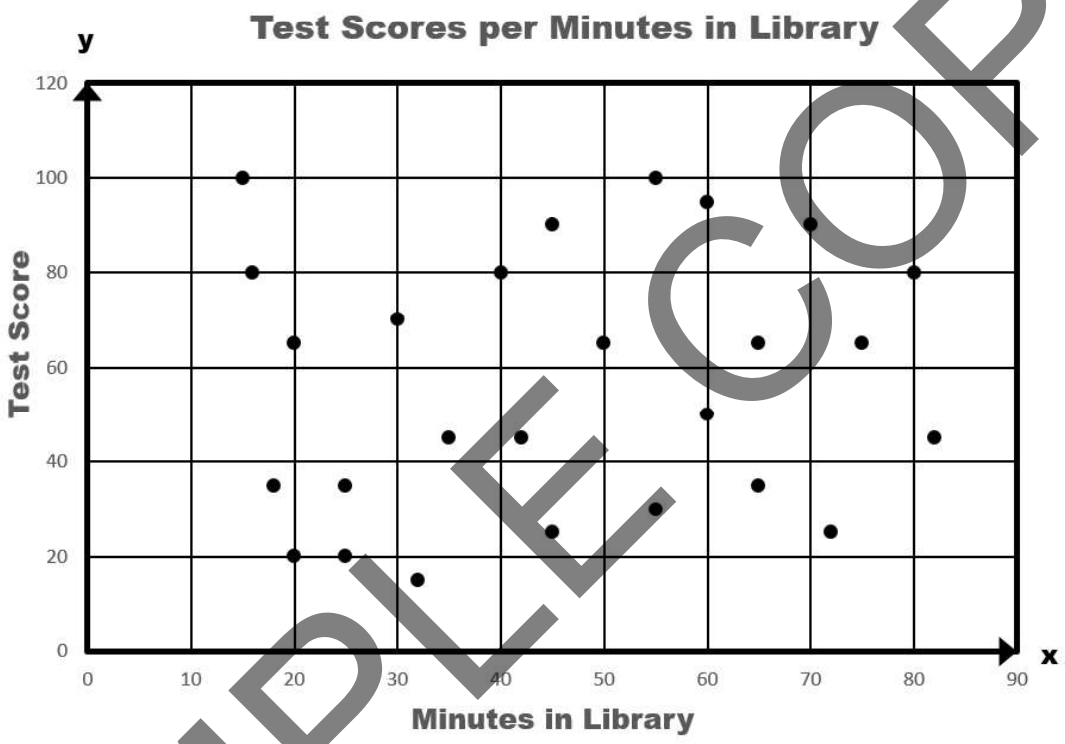
G Point *F*

H Point *G*

J Point *H*

3 (8.11A)

A teacher kept a log of the amount of time students spent in the library before a test and their score on the test. The scatterplot below shows the time spent in the library and score for each student.



Which conclusion is best supported by the scatterplot?

A As the length of time spent in the library increases, the score increases.

B As the length of time in the library increases, the score remains the same.

C As the length of time in the library increases, the score decreases.

D There is no relationship between the length of time in the library and the score.

Spiral 68

1 (8.11B)

The list shows the test scores for five students.

72, 84, 78, 90, 92

What is the mean absolute deviation of the scores?

F 6.56

G 83.2

H 32.8

J 8.2

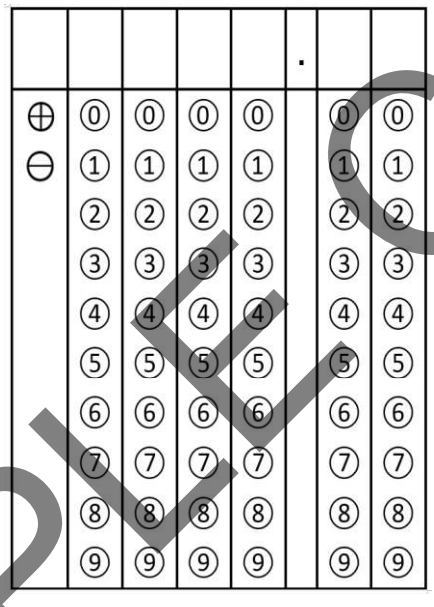
2 (8.11B)

The list shows the test scores for five students.

68, 84, 78, 93, 90

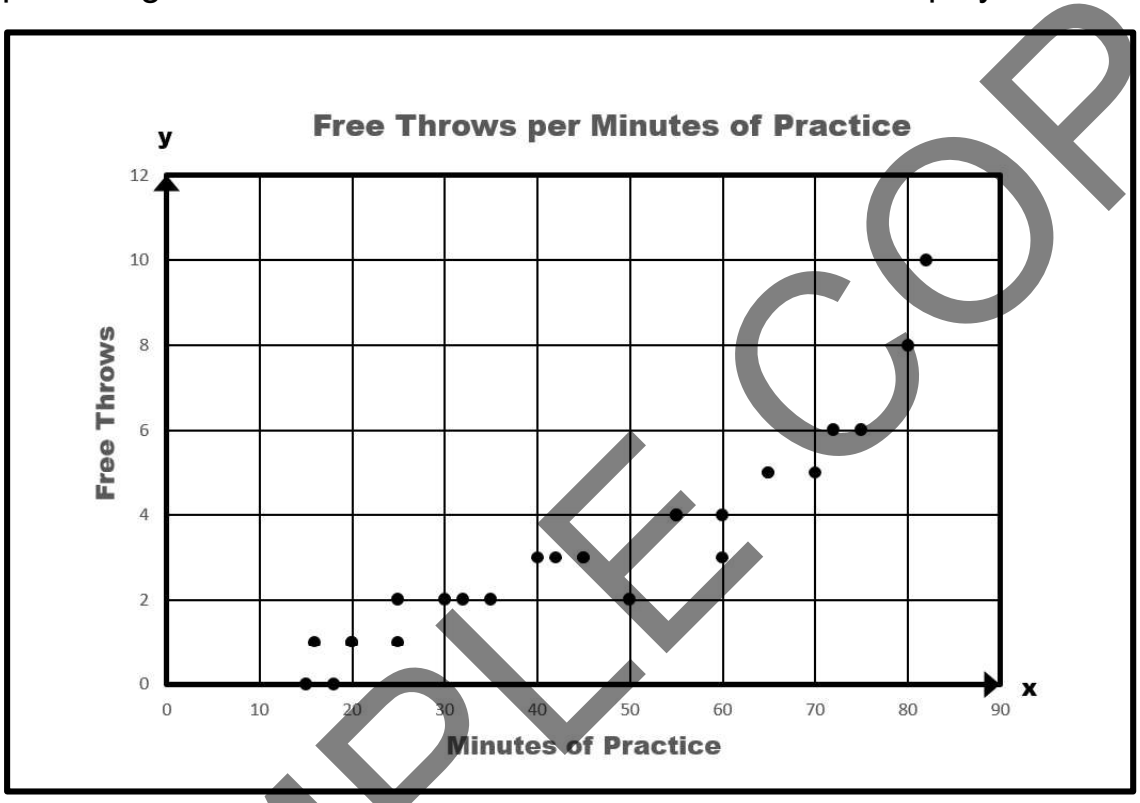
What is the mean absolute deviation of the scores?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



3 (8.11A)

A basketball coach kept a log of the amount of time players spent practicing free throws before a game and the number of free throws each made during the game. The scatterplot below shows the time spent practicing and the number of free throws made for each player.



Which conclusion is best supported by the scatterplot?

F As the length of time spent practicing increases, the number of free throws made increases.

G As the length of time spent practicing increases, the number of free throws made remains the same.

H As the length of time spent practicing increases, the number of free throws made decreases.

J There is no relationship between the length of time spent practicing and the number of free throws made.

Spiral 69

1 (8.12A)

Bank A offers a loan rate of 3% simple interest on a 2-year loan and a 2% simple interest on a 3-year loan. What is the difference in interest for the two loans on a $4,000 loan?

A $0

B $240

C $120

D $60

2 (8.5H)

Which statement is true?

F The cost of renting the arcade at $75 per hour plus a cleaning fee of $200 is proportional, because the function can be represented in the form $y = kx$.

G The cost of renting the arcade at $75 per hour plus a cleaning fee of $200 is not proportional, because the function cannot be represented in the form $y = kx$.

H The cost of renting the arcade at $75 per hour plus a cleaning fee of $200 is proportional, because the function can be represented in the form $y = mx + b$, where $b \neq 0$.

J The cost of renting the arcade at $75 per hour plus a cleaning fee of $200 is not proportional, because the function can be represented in the form $y = mx + b$, where $b \neq 0$

3 (8.12A)

Cam opens a savings account with $500 at a rate of 4.2% compounded annually. His sister invests her $500 at the same rate with simple interest. What is the difference in the final values of each account after 12 years, if no additional deposits or withdrawals are made?

A $819.19

B $752.00

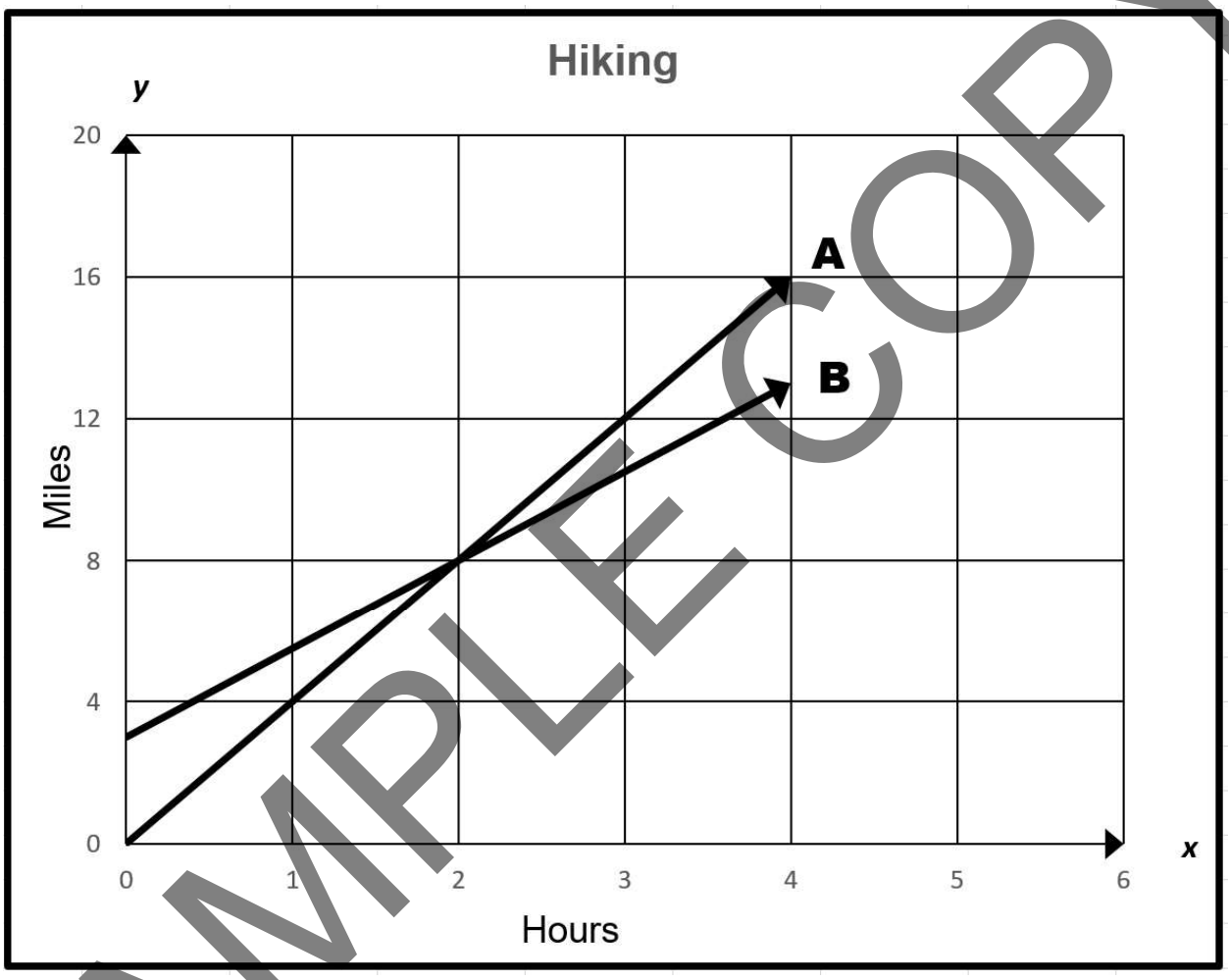
C $1,571.19

D $67.19

Spiral 70

1 (8.9A)

The graph models the linear relationship between the number of hours spent hiking and the point on the trail for two hikers.



Based on the graph, which statement appears to be true?

F Hiker A was 2 miles behind Hiker B at 3 hours.

G Hiker A and Hiker B both reached the 8-mile point at 2 hours.

H Hiker A passed Hiker B at 1 hour.

J Hiker B was 2 miles behind Hiker A at 1 hour.

2 (8.12C)

When Jason is born, his grandmother invests $1,000 into an account that pays 2.75% compounded annually. When Jason turns 18, how much money will the investment be worth, if no other money is deposited or withdrawn?

A $1,629.57

B $1,495.00

C $629.57

D $495.00

3 (8.12C)

When Kimber is born, her grandmother invests $2,000 into an account that pays 2.4% compounded annually. When Kimber turns 21, how much money will the investment be worth, if no other money is deposited or withdrawn?

F $291.01

G $3,291.01

H $3,000.00

J $3,008.00

Spiral 71

1 (8.12C)

Randall invests $500 into a savings account that pays 3.2% interest compounded yearly. How much will his investment increase in 15 years, if no other money is deposited or withdrawn?

A $801.98

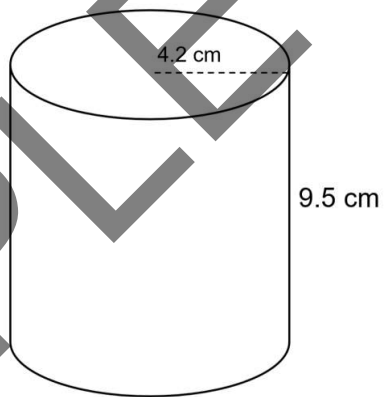
B $240.00

C $301.98

D $740.00

2 (8.6A)

A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V = Bh$, where B represents the area of the base of the cylinder. Which expression can be used to find the value of B, in square centimeters, for this cylinder?

F $\pi(8.4)^2$

G $\pi(9.5)^2$

H $2\pi(4.2)$

J $\pi(4.2)^2$

3 (8.2C)

The springtail may be the smallest insect found in Texas. The small grey specks measure 0.04 inches long. How is this number written in scientific notation?

A 4×10^{-2}

B 4×10^{2}

C 0.4×10^{2}

D 0.04×10^{-2}

SpiralEd Solutions

Spiral 72

1 (8.12D)

Ian has the option of investing $1,000 in Account A that pays 2.75% compounded annually, or Account B that pays 2.75% annual simple interest. What would be his return on his investment on each account after 18 years for each account, if no other money is deposited or withdrawn?

F Account A $629.57; Account B $495.00

G Account A $495.00; Account B $629.57

H Account A $801.98; Account B $495.00

J Account A $629.57; Account B $801.98

2 (8.12D)

Bianca has $2,000 to invest. She researches two different accounts.

- Account A pays 2.4% interest compounded annually.
- Account B pays 2.4% annual simple interest.

Bianca invests $1,500 in Account A and $500 in Account B. What are her combined investments worth after 20 years, if no other money is deposited or withdrawn?

A $740.41

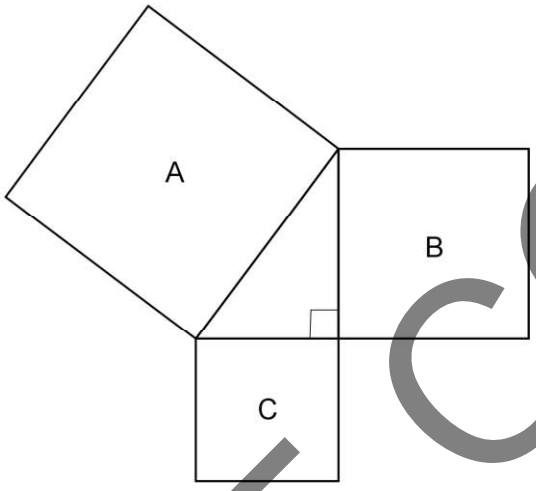
B $3,150.41

C $2,910.41

D $2,410.41

3 (8.6C)

A student is given the diagram below and instructed to cover each square region with congruent square tiles without leaving gaps or overlapping any tiles.



Based on this activity, which statement is true?

F The number of square tiles used to cover Region A minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region B.

G The number of square tiles used to cover Region B minus the number of tiles used to cover Region C will equal the number of square tiles used to cover Region A.

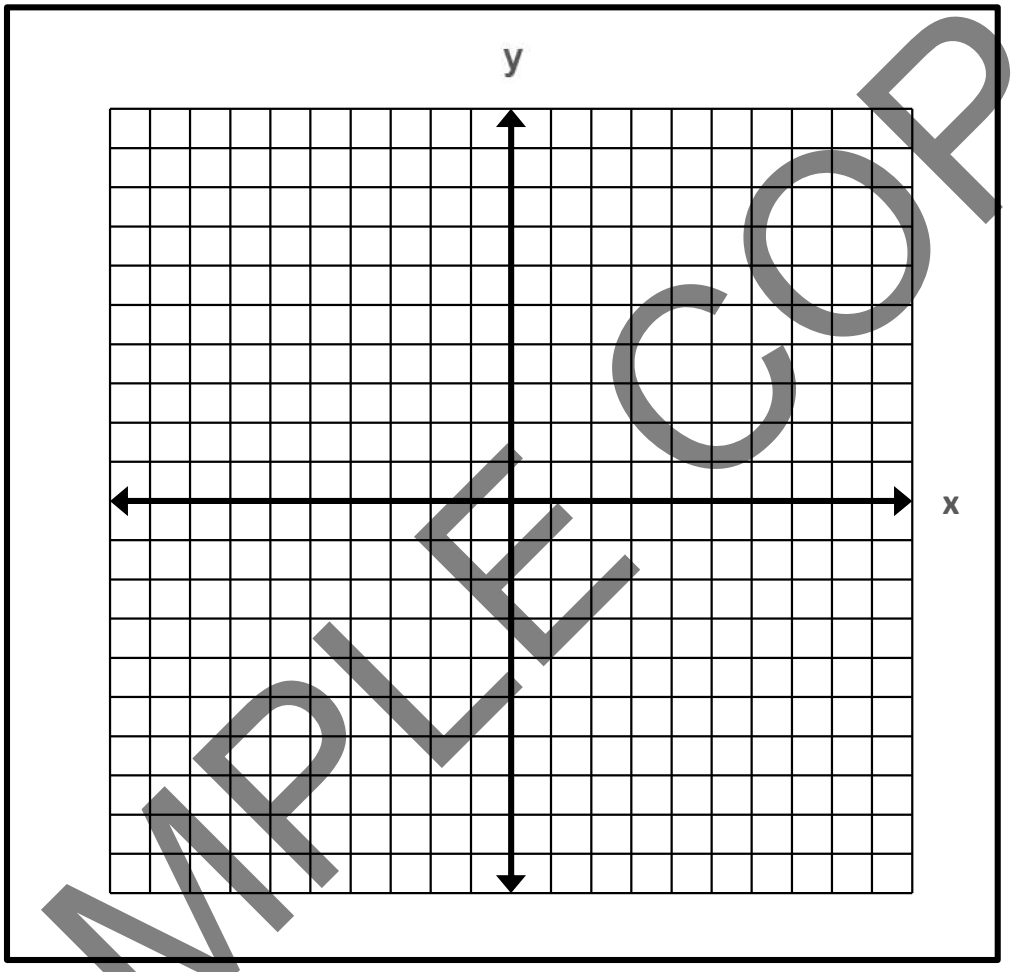
H The number of square tiles used to cover Region B minus the number of tiles used to cover Region A will equal the number of square tiles used to cover Region C.

J The number of square tiles used to cover Region C plus the number of tiles used to cover Region A will equal the number of square tiles used to cover Region B.

Spiral 73

1 (8.7D)

Point *G* is located at (-3,-7) on a coordinate grid. Point *G* is translated 8 units to the left and 9 units up to create point *G′*.



Which measurement is closest to the distance between point *G* and point *G′* in units?

A 8 units

B 15 units

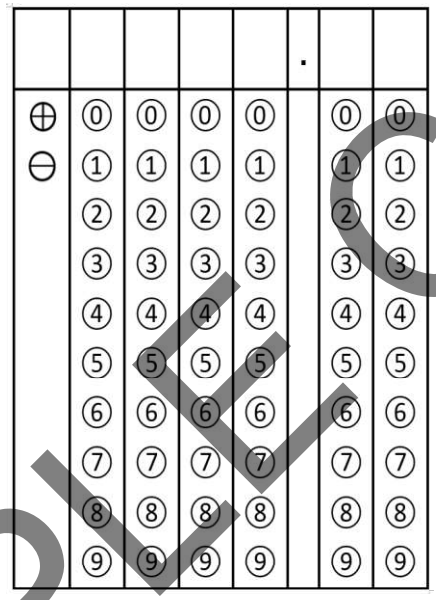
C 10 units

D 12 units

2 (8.12A)

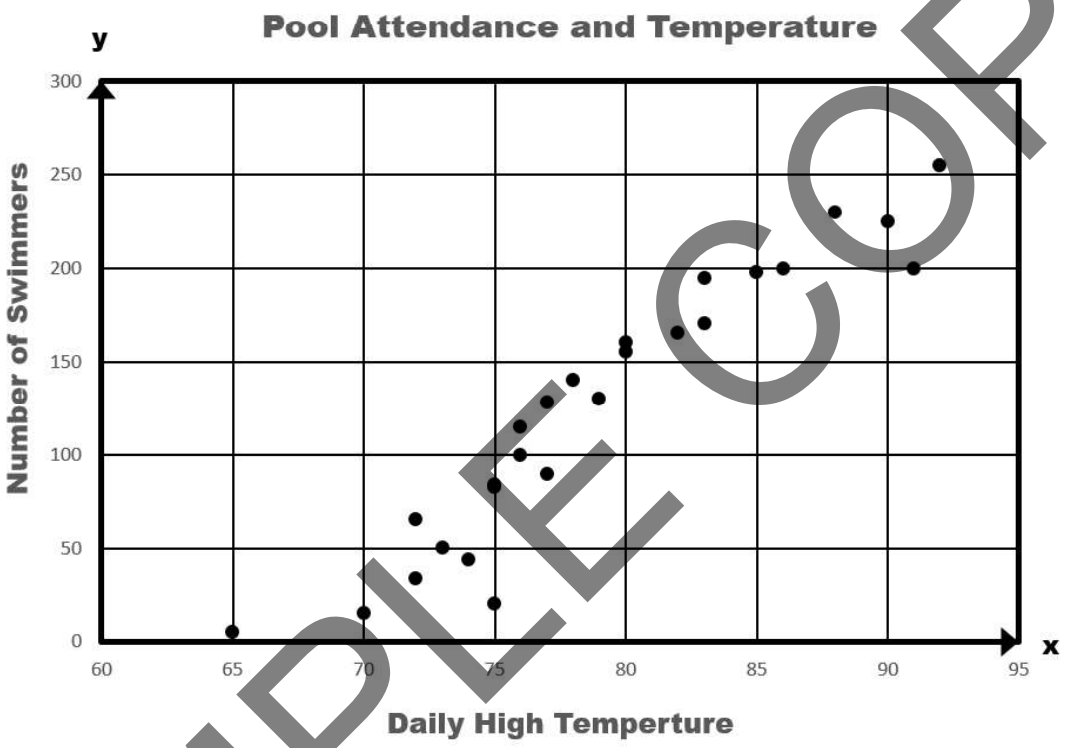
James planes to borrow $5,000. He can get a loan at 3% simple interest. What is the difference in interest between a 5-year loan and a 10-year loan?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



3 (8.11A)

The swimming pool manager recorded the daily pool attendance and the high temperature for each day. The scatterplot below shows the daily pool attendance and high temperature in degrees Fahrenheit.



Which conclusion is best supported by the scatterplot?

A As the daily high temperature increases, the daily pool attendance increases.

B As the daily high temperature increases, the daily pool attendance remains the same.

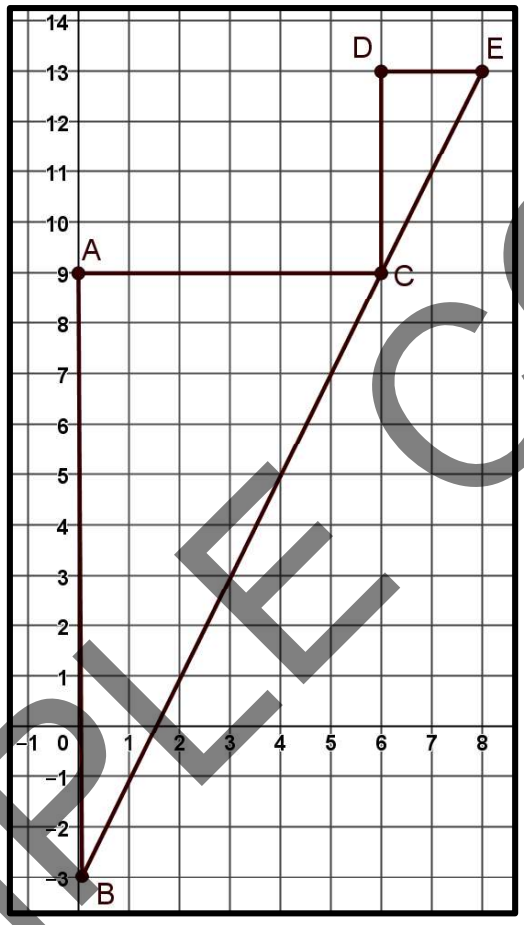
C As the daily high temperature increases, the daily pool attendance decreases.

D There is no relationship between the daily high temperature and daily pool attendance.

Spiral 74

1 (8.4A)

Triangles ABC and DCE are similar right triangles.



Which proportion can be used to show that the slope of $\overline{BC}$ is equal to the slope of $\overline{CE}$?

F $\frac{8-6}{13-9}=\frac{6-0}{9-(-3)}$

G $\frac{13-9}{8-6}=\frac{6-0}{9-(-3)}$

H $\frac{13-9}{6-0}=\frac{9-(-3)}{8-6}$

J $\frac{13-9}{8-6}=\frac{9-(-3)}{6-0}$

2 (8.8A)

Wedding Venue A charges $25 per guest plus a rental fee of $1000. Wedding Venue B charges $45 per guest plus a rental fee of $800. Which equation can be used to find *g*, the number of guests attending the wedding, so that the total charge at Wedding Venue A is less than or equal to the total charge at Wedding Venue B?

A $1000 + 45g \leq 800 + 25g$

B $1000 + 25g \geq 800 + 45g$

C $1000 + 25g \leq 800 + 45g$

D $1000 + 25g = 800 + 45g$

3 (8.12G)

Will and his family develop a plan to pay for his college tuition. The college he plans to attend costs $8,000 per year for tuition with an additional $579 for books and fees. Will has a $1,000 scholarship for each year. If the family develops a monthly savings plan to set aside this money, about how much will they need to save each month for a year to pay for Will's first year of college?

F $650

G $725

H $850

J $525

SpiralEd Solutions

Spiral 75

1 (8.12G)

The college Josey plans to attend costs $18,000 per year for tuition, books, and fees. Josey's grandparents are paying half of this amount for her. Josey will need to cover 25% of the remaining cost through her summer job. What is the least amount Josey can make with her summer job and have enough to pay her share of tuition?

A $650 per month for three months

B $750 per month for three months

C $800 per month for three months

D $525 per month for three months

2 (8.12G)

Attending a state technical school costs $19,000 to obtain a welding certification. Weston has $15,000 in college savings. He plans to pay the remaining cost by working part time his junior and senior years in high school. What is the minimum amount Weston will need to set aside each month for those two years to have enough for tuition?

F $200 per month

G $150 per month

H $170 per month

J $125 per month

3 (8.8B)

Which of the following problems can be solved by using the equation, $250d + 300 = 300d$, where d represents the number of days?

A Vacation Rental A costs $250 each day plus a one-time cleaning fee of $300. Vacation Rental B costs $300 per day. Write an inequality to calculate the number of rental days, *d*, for the total cost of renting Vacation Rental A to be greater than or equal to the total cost of renting Vacation Rental B.

B Vacation Rental A costs $300 each day plus a one-time cleaning fee of $250. Vacation Rental B costs $300 per day. Write an equation to calculate the number of rental days, *d*, for the total cost of renting Vacation Rental A to equal the total cost of renting Vacation Rental B.

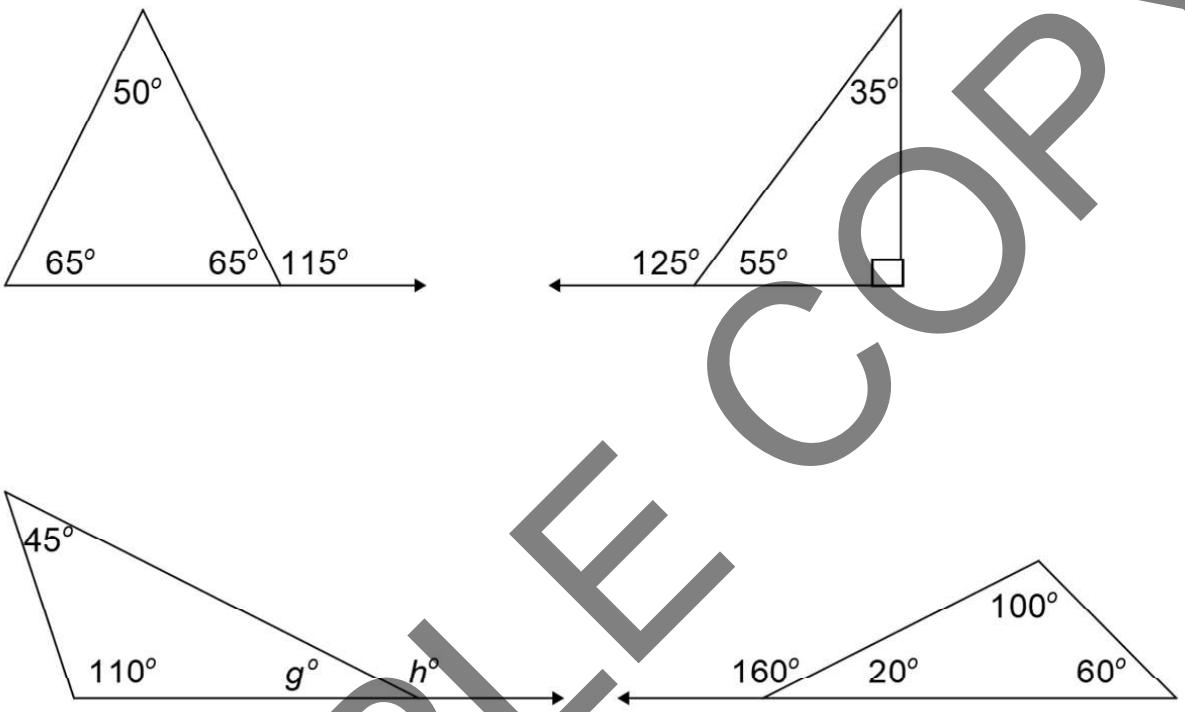
C Vacation Rental A costs $250 each day plus a one-time cleaning fee of $300. Vacation Rental B costs $300 per day. Write an inequality to calculate the number of rental days, *d*, for the total cost of renting Vacation Rental A to be less than the total cost of renting Vacation Rental B.

D Vacation Rental A costs $250 each day plus a one-time cleaning fee of $300. Vacation Rental B costs $300 per day. Write an equation to calculate the number of rental days, *d*, for the total cost of renting Vacation Rental A to equal the total cost of renting Vacation Rental B.

Spiral 76

1 (8.8D)

Four triangles are shown.



Based on these triangles, which statement is true?

F $h = 60^o$, because (180 – 110) + 50 = 120 and 180 – 120 = 60.

G $h = 77.5^o$, because 110 + 45 = 155 an 155 ÷2 = 77.5

H $h = 155^o$, because 180 – (110 + 45) = 25 and 180 – 25 = 155.

J $h = 90^o$, because 180 – (45 + 45) = 90 and 180 – 90 = 90.

2 (8.12G)

Attending the local community college costs $13,000 for an Associate's Degree in Nursing. Allison has $11,000 in college savings. She plans to pay the remaining cost by working part time her senior year in high school. What is the minimum amount Allison will need to set aside each month for 12 months to have enough for tuition?

A $200 per month

B $150 per month

C $170 per month

D $125 per month

3 (8.12C)

A teacher has her students set up mock savings accounts to learn about compound interest and investment. If a student invests $50 into an account that earns 5% compounded annually, and no other money is deposited or withdrawn, which of the following statement is true?

F After 5 years the student's account will be worth $13.81.

G After 5 years the student will earn $138.10 on his investment.

H After 5 years the student's account will be worth $62.50.

J After 5 years the student will earn $13.81 on his investment.

Spiral 77

1 (8.12D)

Jayden has $1,000 to invest. She researches two different accounts.

- Account A pays 3.2% interest compounded annually.
- Account B pays 3.2% annual simple interest.

Jayden invests $500 in Account A and $500 in Account B. What are her combined investments worth after 15 years, if no other money is deposited or withdrawn?

A $740.00

B $541.98

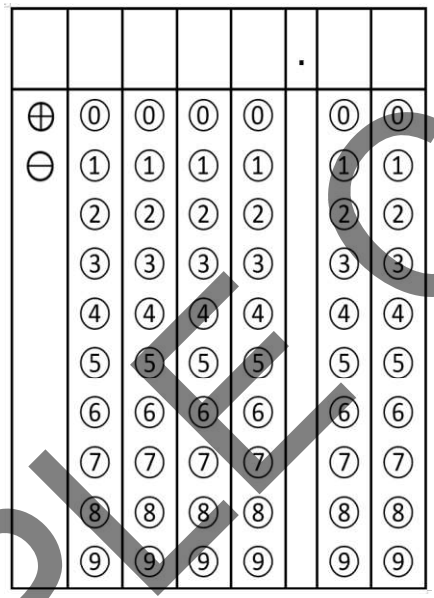
C $801.98

D $1,541.98

2 (8.12A)

Bank A offers a loan rate of 4% simple interest on a 2-year loan and a 3% simple interest on a 3-year loan. What is the difference in interest for the two loans on a $2,000 loan?

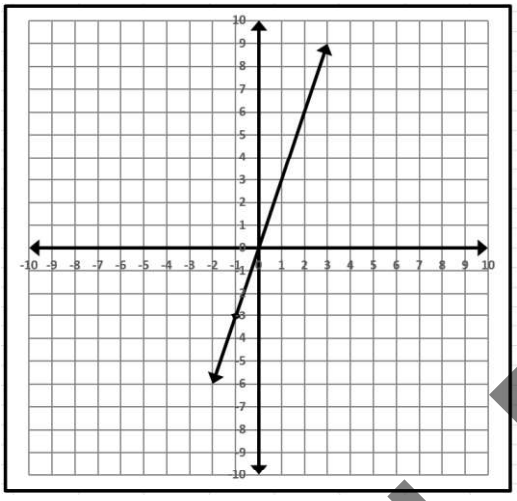
Record your answer and fill in the bubbles. Be sure to use the correct place value.



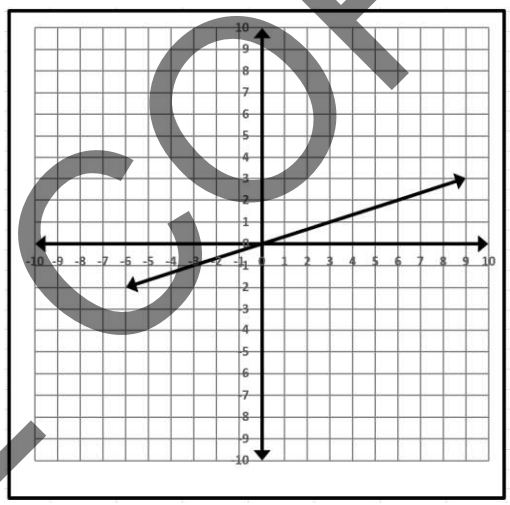
3 (8.5A)

Which graph contains only corresponding x-values and y-values where the value of y is the product of $\frac{1}{3}$ and x?

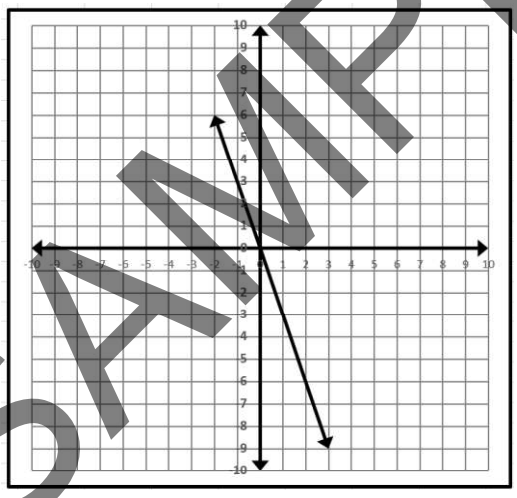
A



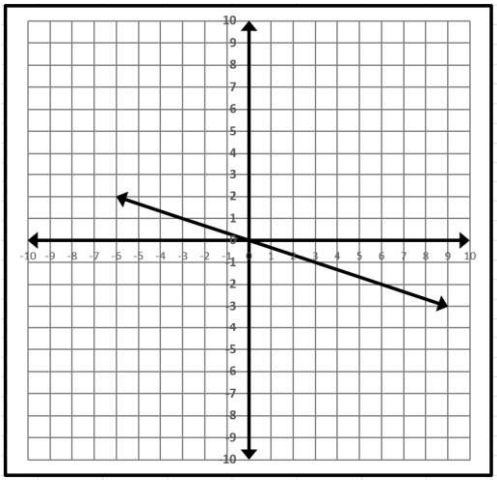
B



C



D



SpiralEd Solutions

Spiral 78

1 (8.12G)

Tuition at the college Emily plans to attend costs $17,000 per year. Her counselor recommends that Emily set aside an additional 15% of that amount to cover room, meals, books, and fees. What will be the total cost for four years of college for Emily, including the money for room, meals, books, and fees?

F $68,000

G $19,550

H $82,600

J $78,200

2 (8.8B)

Which of the following problems can be solved by using the inequality, $12h + 300 > 10h + 400$, where h represents the number of hours worked?

A Job A pays 12 dollars per hour with a $400 signing bonus, while Job B pays 10 dollars per hour with a $300 signing bonus. Write an inequality to calculate the number of hours, *h*, an employee will have to work to earn more money at Job A than Job B.

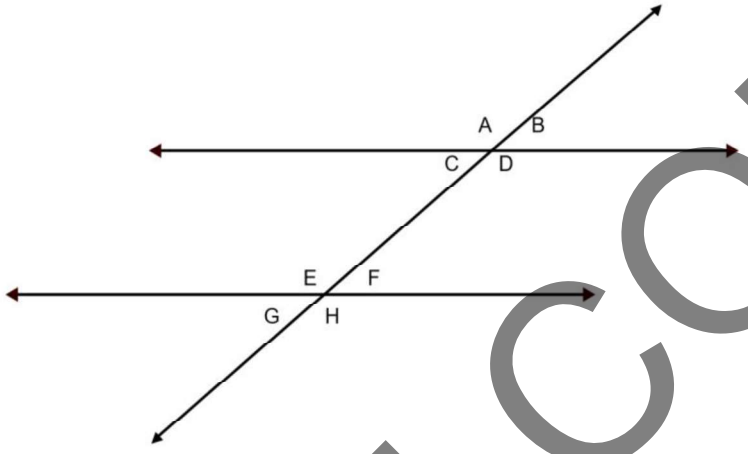
B Job A pays provides a $300 signing bonus and pays 12 dollars per hour, while Job B pays 10 dollars per hour with a $400 signing bonus. Write an equation to calculate the number of hours, *h*, an employee will have to work to earn an equal amount of money for Job A and Job B.

C Job A pays 12 dollars per hour with a $300 signing bonus, while Job B pays 10 dollars per hour with a $400 signing bonus. Write an inequality to calculate the number of hours, *h*, an employee will have to work to earn more money at Job A than Job B.

D Job A pays a $400 signing bonus and 10 dollars per hour, while Job B pays 12 dollars per hour with a $40 uniform charge per paycheck. Write an equation to calculate the number of hours, *h*, an employee will have to work to earn more money at Job A than Job B.

3 (8.8D)

Two parallel lines cut by a transversal are shown.



If $m\angle A + m\angle B = 180$, which of the following is true?

F $m\angle C = 180 - m\angle B$

G $m\angle F = 180 + m\angle D$

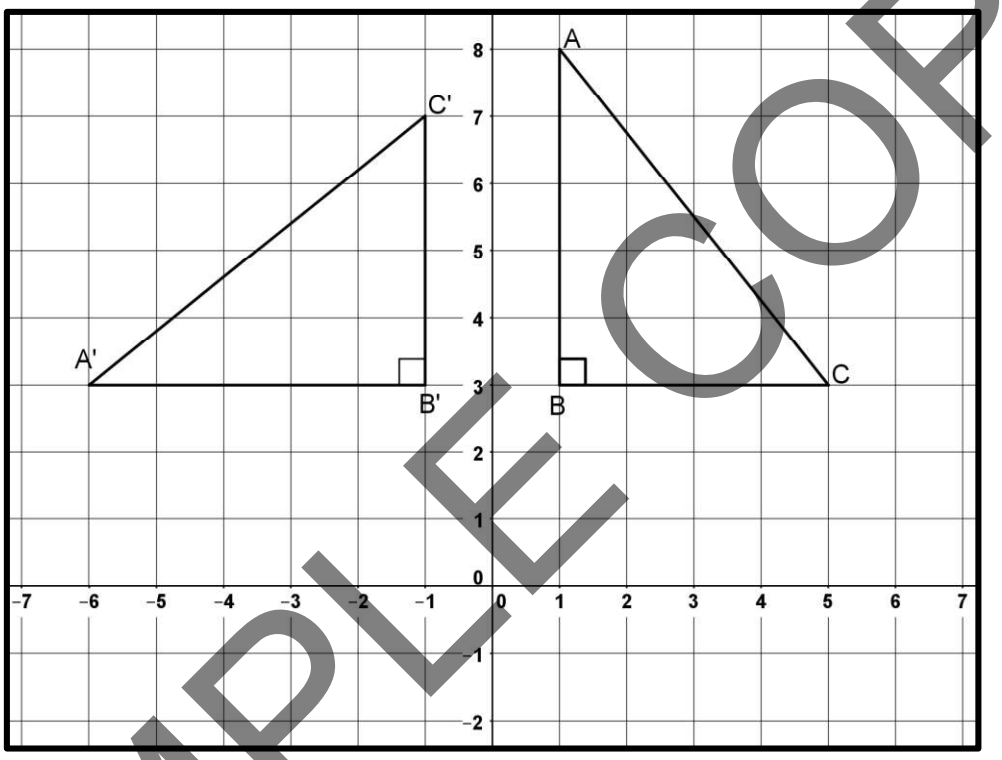
H $m\angle A + m\angle D = 180$

J $m\angle C = 180 - m\angle D$

Spiral 79

1 (8.10A)

$\triangle ABC$ has been transformed to create $\triangle A'B'C'$. Explain what type of transformation is represented and what properties of orientation or congruence are demonstrated.



A $\triangle A'B'C'$ is a rotation of $\triangle ABC$, because congruence is preserved, but orientation and orientation of the vertices is not preserved.

B $\triangle A'B'C'$ is a reflection of $\triangle ABC$, because congruence is not preserved, but orientation and orientation of the vertices are preserved.

C $\triangle A'B'C'$ is a rotation of $\triangle ABC$, because congruence is preserved, but orientation is not preserved.

D $\triangle A'B'C'$ is a translation of $\triangle ABC$, because congruence and orientation are preserved.

2 (8.10B)

Which representation of a transformation on a coordinate grid does **not** preserve congruence?

F $(x, y) \rightarrow (-x, -y)$

G $(x, y) \rightarrow (\frac{1}{4}x, \frac{1}{4}y)$

H $(x, y) \rightarrow (x + 2, -y)$

J $(x, y) \rightarrow (x, -y)$

3 (8.12G)

Tuition at the college Emily plans to attend costs $17,000 per year. Her counselor recommends that Emily set aside an additional 15% of that amount to cover room, meals, books, and fees. Emily's grandparents have agreed to pay for her first year of school. What will be the total cost for one year of college for Emily, including the money for room, meals, books, and fees?

A $22,420

B $19,550

C $32,600

D $18,200

SpiralEd Solutions

Spiral 80

1 (8.10B)

Which representation of a transformation on a coordinate grid preserves congruence?

F $(x,y) \rightarrow (-\frac{2}{3}x, -\frac{2}{3}y)$

G $(x,y) \rightarrow (2x,2y)$

H $(x,y) \rightarrow (3x,3y)$

J $(x,y) \rightarrow (x+\frac{1}{2}, y+\frac{1}{2})$

2 (8.10B)

Which representation of a transformation on a coordinate grid preserves congruence?

A $(x,y) \rightarrow (3x,3y)$

B $(x,y) \rightarrow (2x,2y)$

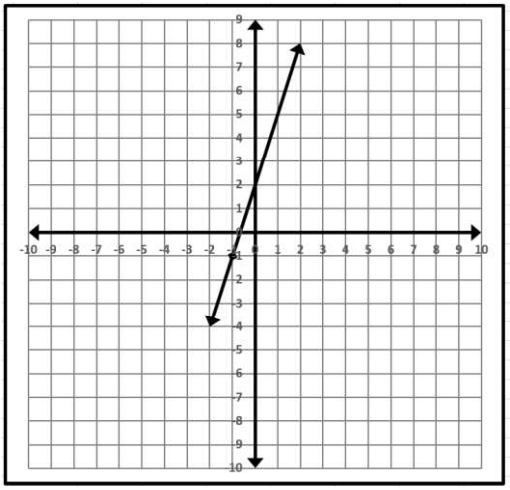
C $(x,y) \rightarrow (y,-x)$

D $(x,y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

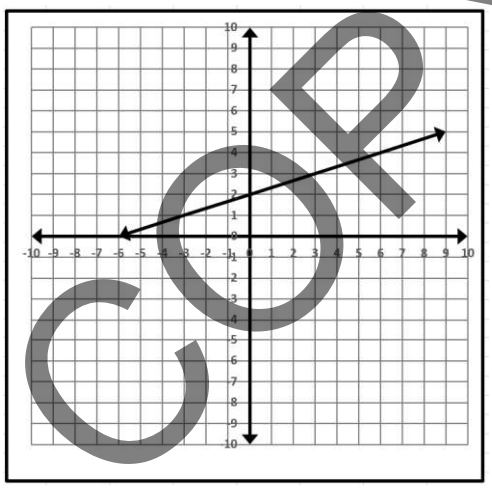
3 (8.5B)

Which graph contains only corresponding x-values and y-values where the value of y is 2 more than the product of $\frac{1}{3}$ and x?

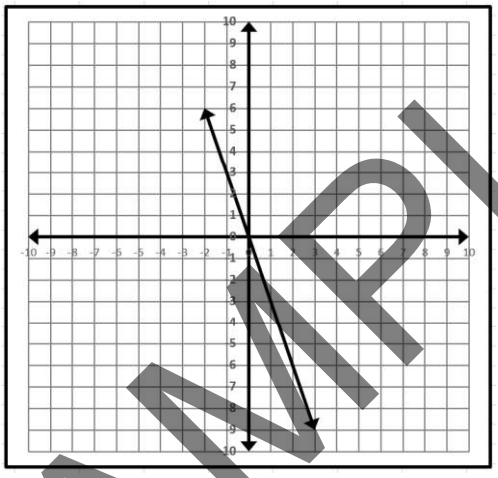
F



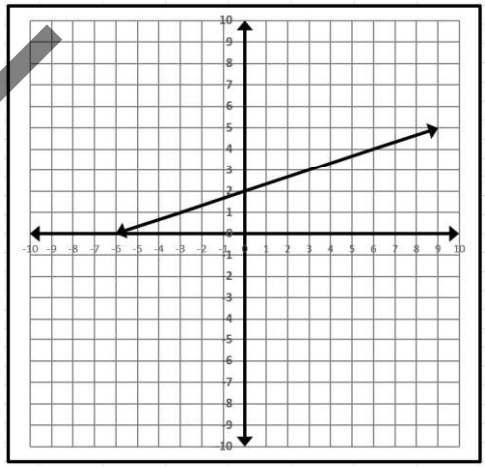
G



H

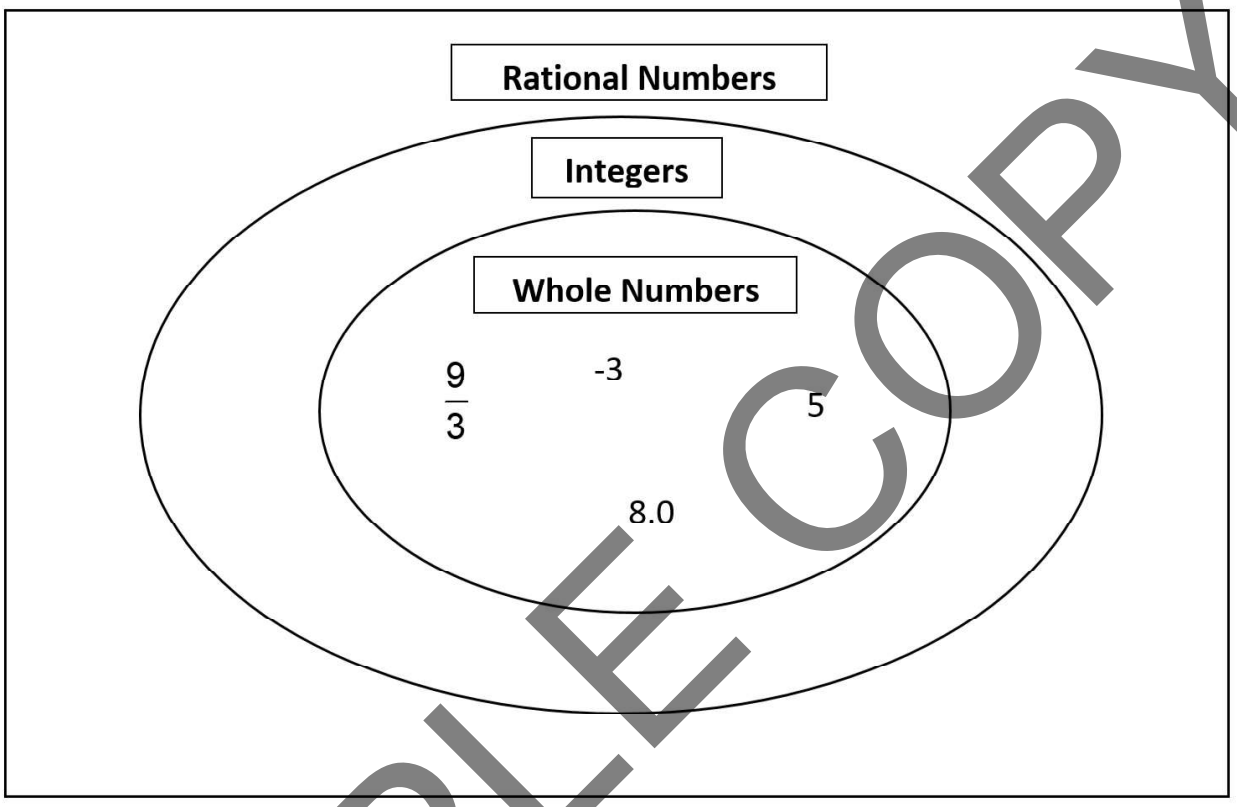


J



Spiral 81

1 (8.2A)



Which number in the diagram is placed incorrectly?

A $\frac{9}{3}$

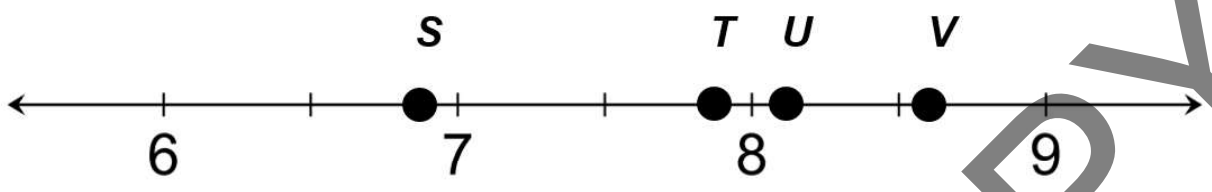
B 5

C -3

D 8.0

2 (8.2B)

Which point on the number line best represents the location of $\sqrt{66}$?



F Point *S*

G Point *T*

H Point *U*

J Point *V*

3 (8.2C)

How would 5.03×10^{-3} be written in standard notation?

A 503,000

B 0.00503

C 0.0503

D 50,300

Spiral 82

1 (8.10D)

The blue rectangle in a company logo is similar in shape to the red rectangle in the same logo. Each dimension of the blue rectangle is 1.5 times the corresponding dimension of the red rectangle. Which statement is true?

F The area of the blue rectangle is 2.25 times the area of the red rectangle.

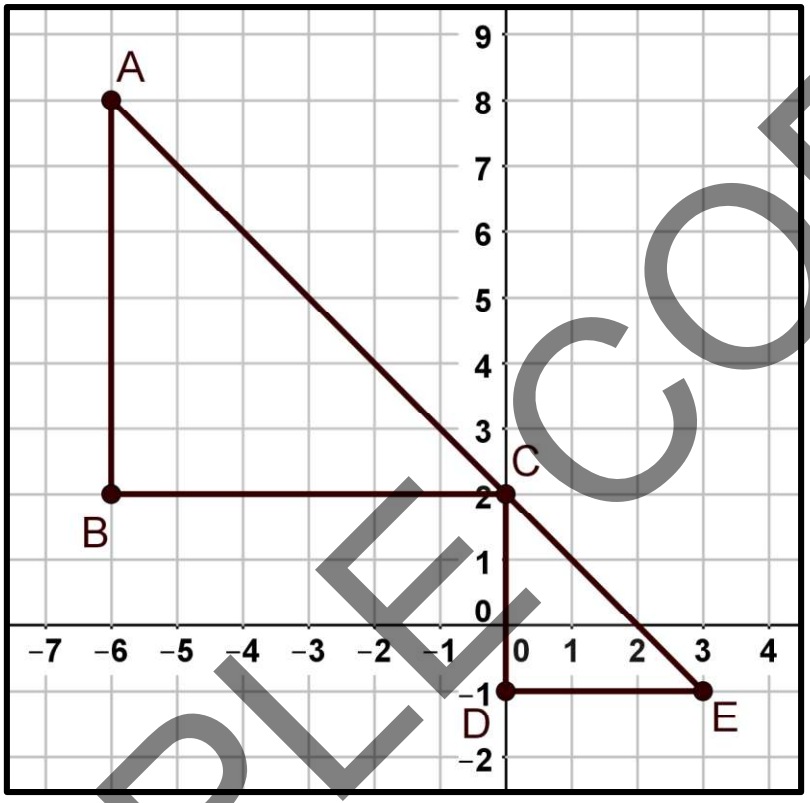
G The area of the blue rectangle is 1.5 times the area of the red rectangle.

H The perimeter of the blue rectangle is 2.25 times the perimeter of the red rectangle.

J The perimeter of the blue rectangle is 4.5 times the perimeter of the red rectangle.

2 (8.4A)

Triangles ABC and CDE are similar right triangles.



Which proportion can be used to show that the slope of $\overline{AC}$ is equal to the slope of $\overline{CE}$?

A $\dfrac{-6-0}{8-2}=\dfrac{0-3}{2-(-1)}$

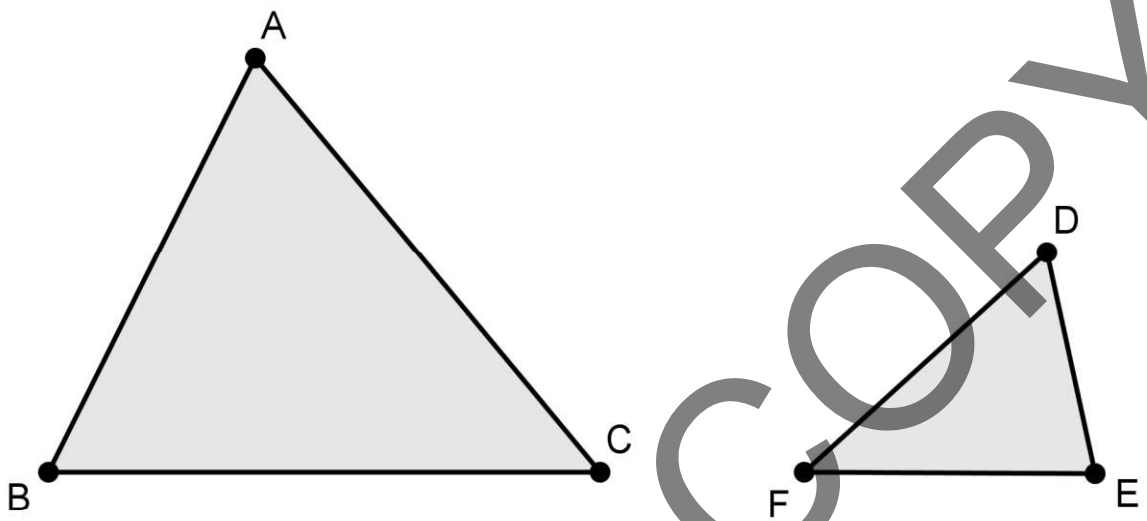
B $\dfrac{-6-0}{2-(-1)}=\dfrac{0-3}{8-2}$

C $\dfrac{8-2}{0-3}=\dfrac{2-(-1)}{6-0}$

D $\dfrac{8-2}{-6-0}=\dfrac{2-(-1)}{0-3}$

3 (8.3A)

$\triangle DEF$ is similar to $\triangle ABC$.



Which segment completes the proportion?

$$\frac{AC}{DF} = \frac{?}{EF}$$

F *GH*

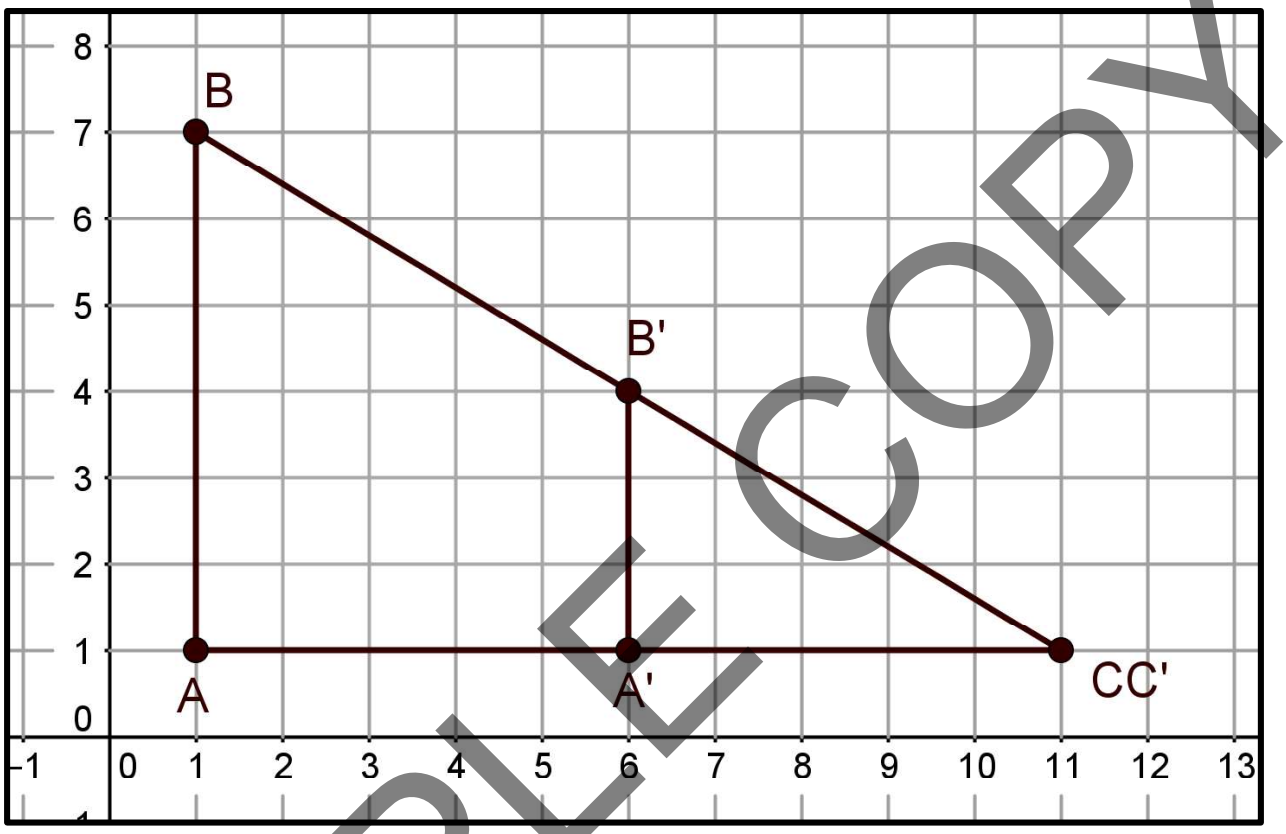
G *CD*

H *FG*

J *BC*

Spiral 83

1 (8.3B)



$\triangle A'B'C'$ is a dilation of $\triangle ABC$ with a scale factor of 0.5. Which statement correctly shows the relationship between the area of $\triangle ABC$ and the area of $\triangle A'B'C'$?

A The area of $\triangle A'B'C'$ is half the area of $\triangle ABC$.

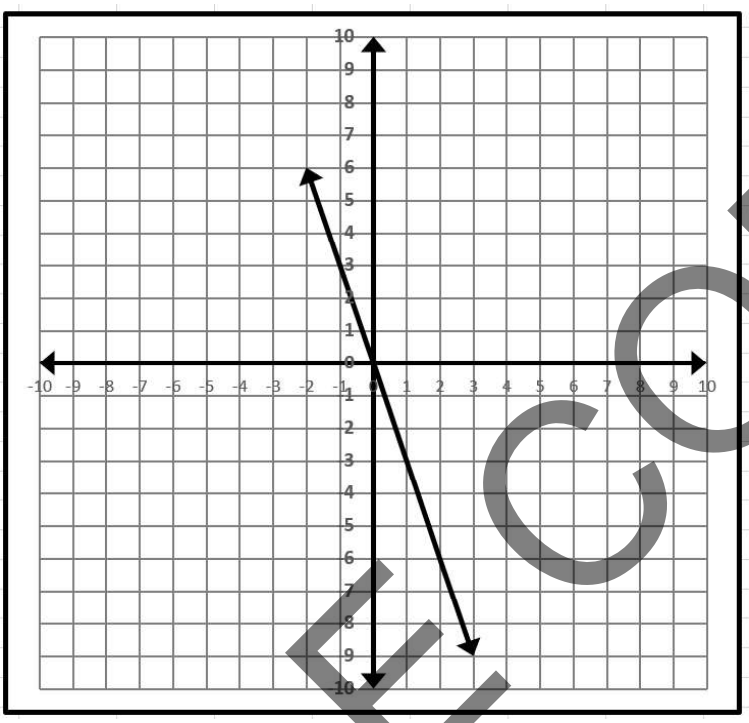
B The area of $\triangle A'B'C'$ is twice the area of $\triangle ABC$.

C A The area of $\triangle A'B'C'$ is one-fourth the area of $\triangle ABC$.

D A The area of $\triangle A'B'C'$ is one-third the area of $\triangle ABC$.

2 (8.5A)

Which statement is true about the graph?



F The graph contains only corresponding x-values and y-values where the value of y is the product of 3 and x.

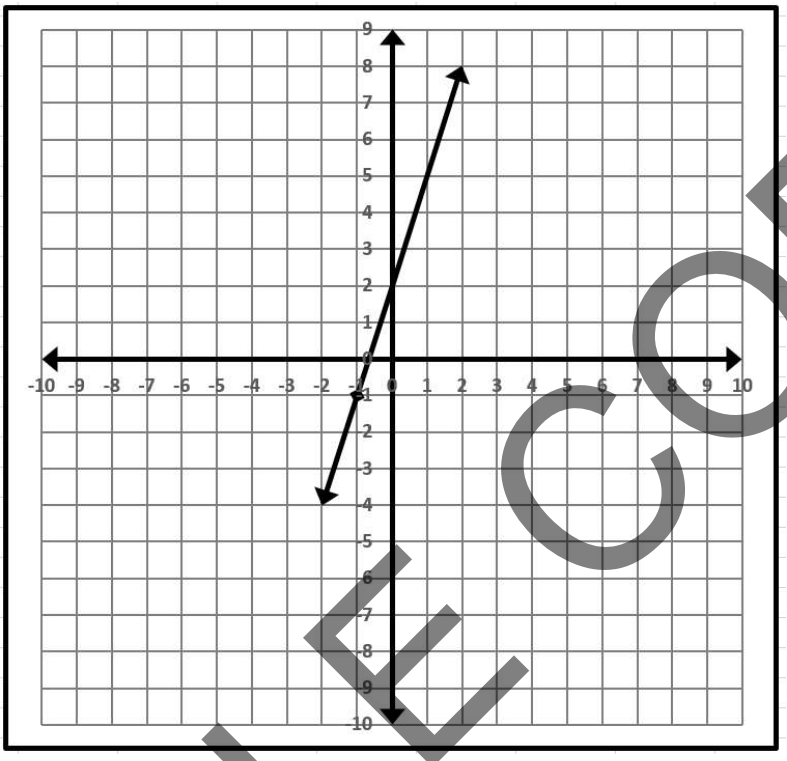
G The graph contains only corresponding x-values and y-values where the value of y is the product of -3 and x.

H The graph contains only corresponding x-values and y-values where the value of y is the product of $\frac{1}{3}$ and x.

J The graph contains only corresponding x-values and y-values where the value of y is the product of $-\frac{1}{3}$ and x.

3 (8.5B)

Which statement is true about the graph?



A The graph contains only corresponding x-values and y-values where the value of y is 2 more than the product of 3 and x.

B The graph contains only corresponding x-values and y-values where the value of y is 3 more than the product of 2 and x.

C The graph contains only corresponding x-values and y-values where the value of y is 2 more than the product of -3 and x.

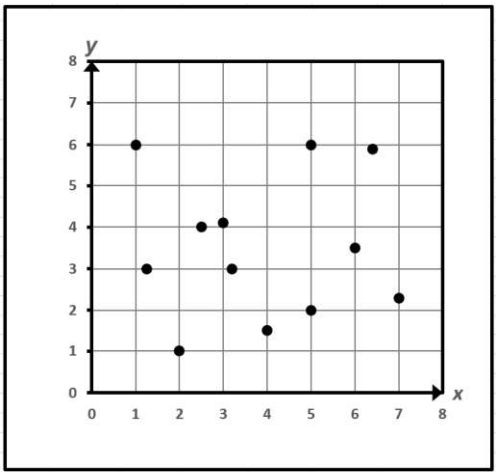
D The graph contains only corresponding x-values and y-values where the value of y is 2 more than the product of $\frac{1}{3}$ and x.

Spiral 84

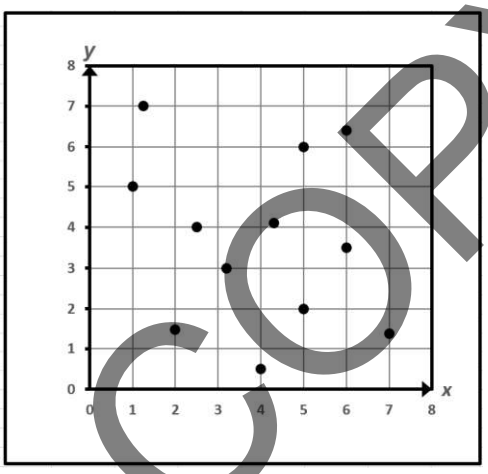
1 (8.5C)

Which scatterplot suggests a linear relationship between x and y?

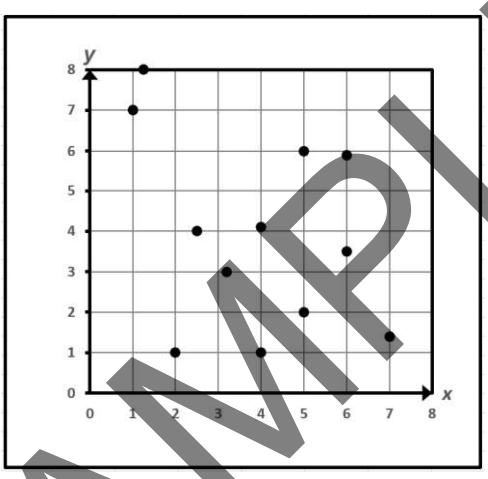
F



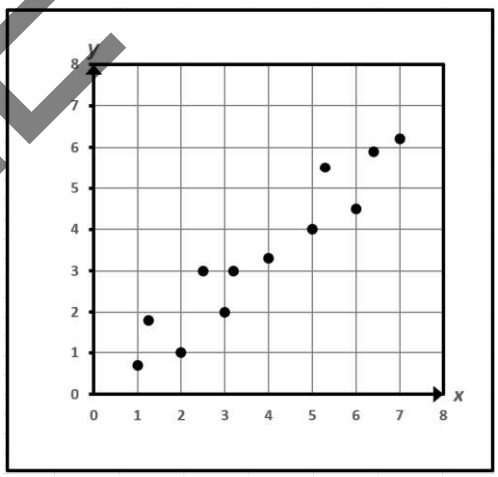
G



H



J



2 (8.11B)

The list shows the number of movie tickets sold over seven days.

225, 314, 75, 184, 98, 177, 201

What is the mean absolute deviation for this list?

A 182

B 76.8

C 56

D 184

3 (8.11B)

The list shows the number of movie tickets sold over five days.

225, 314, 75, 184, 98

What is the mean absolute deviation for this list?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

					.		
⊕	⓪	⓪	⓪	⓪		⓪	⓪
⊖	①	①	①	①		①	①
	②	②	②	②		②	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

SpiralEd Solutions

Spiral 85

1 (8.5E)

The value of y varies directly with x. When $y = 12, x = 3$. What is the value of y when $x = \frac{1}{2}$?

A 2

B 18

C 9

D 48

2 (8.11B)

The list shows the number of snow cones sold over seven days.

25, 34, 57, 84, 98, 77, 61

What is the mean absolute deviation for this list?

F 23

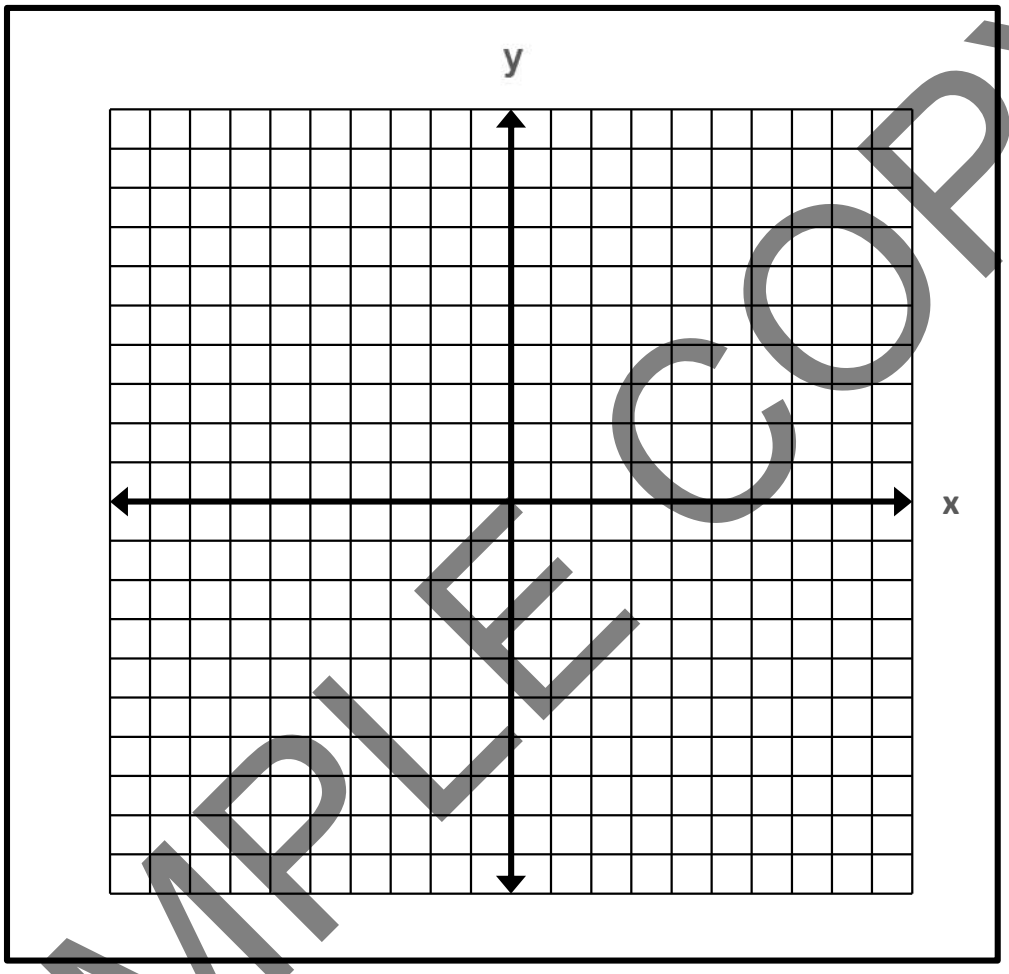
G 62.29

H 61

J 20.61

3 (8.7D)

Point *H* is located at (6,5) on a coordinate grid. Point *H* is translated 7 units to the left and 10 units down to create point *H′*.



Which measurement is closest to the distance between point *H* and point *H′* in units?

A 8 units

B 15 units

C 10 units

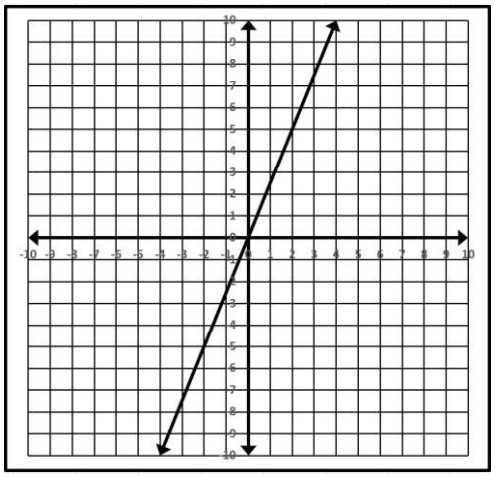
D 12 units

Spiral 86

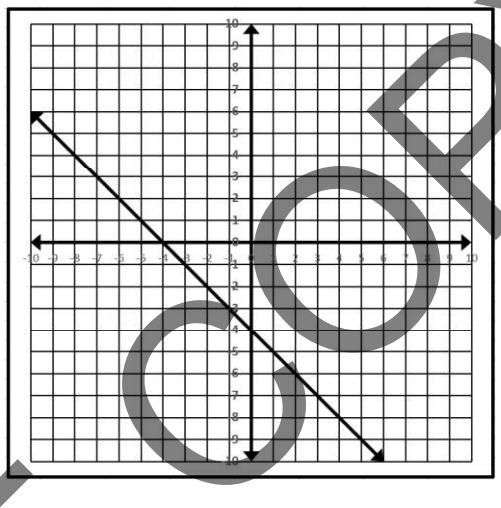
1 (8.5F)

Which graph does **not** show a proportional relationship between x and y?

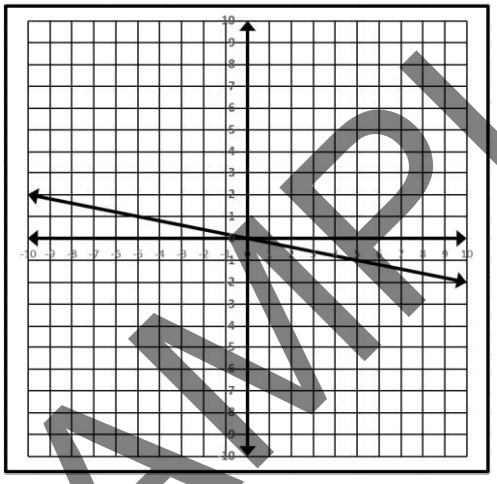
F



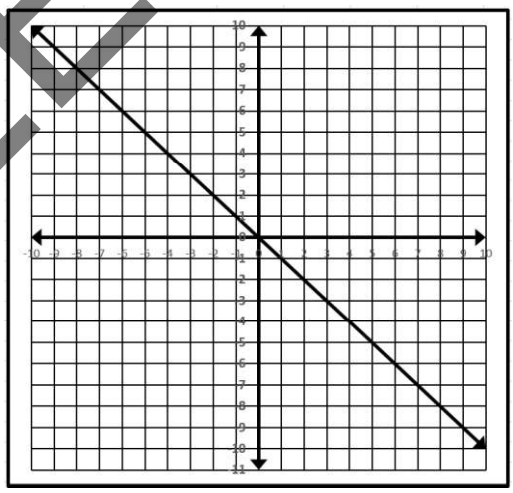
G



H



J



2 (8.8A)

Rental Company A charges $50 per hour plus a delivery fee of $400 to rent a small bulldozer. Rental Company B charges $100 per hour with free delivery to rent the same equipment. Which inequality can be used to find h, the number of hours rental, so that the total charge at Rental Company A is greater than or equal to the total charge at Rental Company B?

A $50h - 400 \geq 100h$

B $50h + 400 \geq 100h$

C $50h + 400 = 100h$

D $50h + 400 \leq 100h$

3 (8.8B)

Which of the following problems can be solved by using the inequality, $72.5d + 125 < 57.2d + 250$, where d represents the number of days?

F To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $72.50 per day. To rent the same car, Company B charges $57.20 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, *d*, for the total cost of renting from Company B to be less than the total cost of renting from Company A.

G To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $72.50 per day. To rent the same car, Company B charges $57.20 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, *d*, for the total cost of renting from Company B to be more than the total cost of renting from Company A.

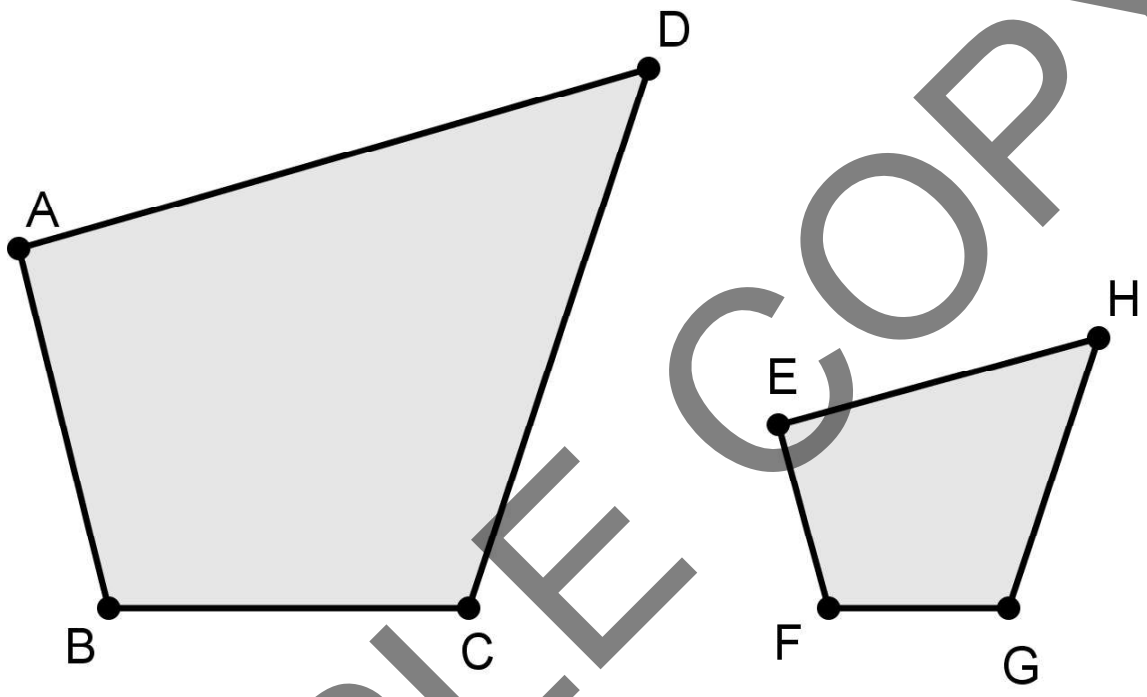
H To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $57.20 per day. To rent the same car, Company B charges $72.50 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, *d*, for the total cost of renting from Company B to be less than the total cost of renting from Company A.

J To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $57.20 per day. To rent the same car, Company B charges $72.50 per day plus a rental fee of $250. Write an inequality to calculate the number of rental days, *d*, for the total cost of renting from Company B to be more than the total cost of renting from Company A.

Spiral 87

1 (8.3A)

EFGH is a dilation of *ABCD*



Which segment completes the proportion?

$$\frac{AD}{EH} = \frac{?}{FG}$$

A *GH**B** *CD*

C *FG**D** *BC*

2 (8.12A)

Anna planes to borrow $5,000. She can get a loan at 3% compounded annually. What is the difference in earnings between a 5-year loan and a 10-year loan?

F $796.37

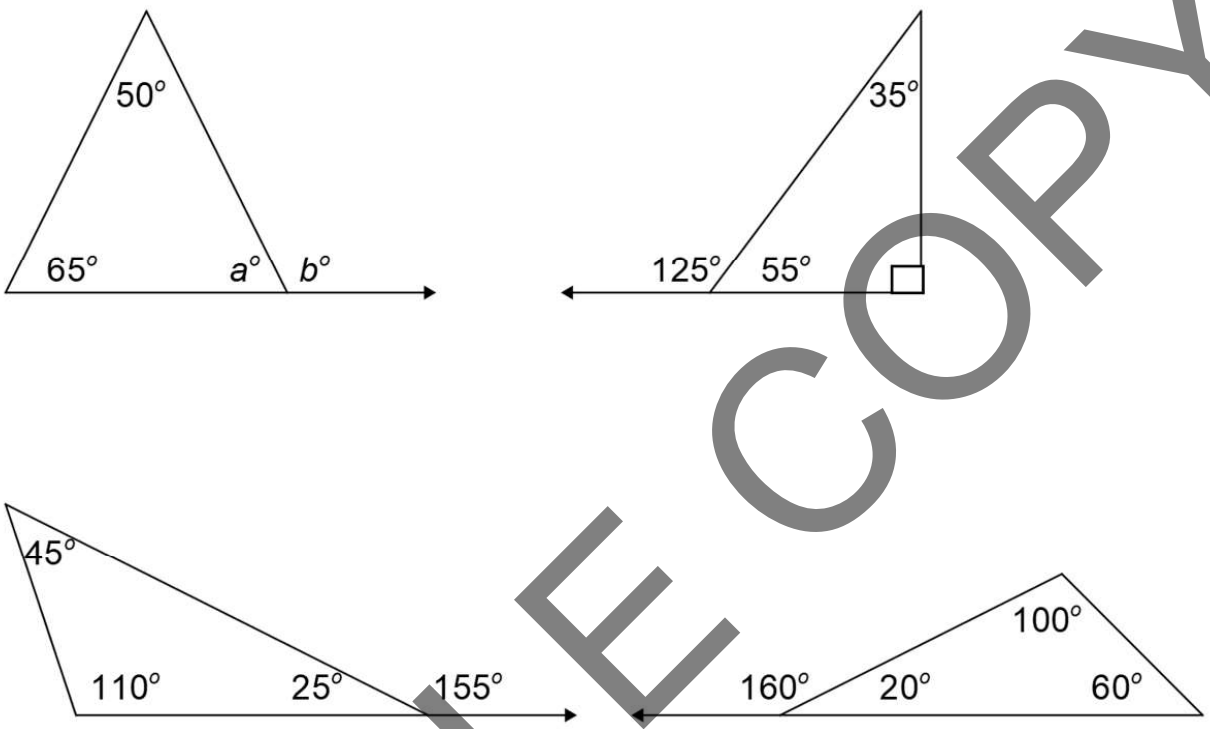
G $1,719.58

H $750

J $923.21

3 (8.8D)

Four triangles are shown.



Based on these triangles, which statement is true?

A $b = 15^{o}$, because (180 – 65) + 50 = 165 and 180 – 165 = 15.

B $b = 65^{o}$, because 180 – (65 + 50) = 65.

C $b = 57.5^{o}$, because 180 -65 = 115 and 115 ÷2 = 57.5

D $b = 115^{o}$, because 180 – (65 + 50) = 65 and 180 – 65 = 115.

SpiralEd Solutions

Spiral 88

1 (8.5H)

Which situation represents a proportional relationship?

F The cost of renting a post office box for $28 per month.

G The cost of renting a post office box for $32 per month plus a $40 registration fee.

H The cost of renting a post office box for $50 per month with a $75 transfer charge.

J The cost of renting a post office box for a non-refundable deposit of $100 plus $30 per month.

2 (8.10B)

Which representation of a transformation on a coordinate grid does **not** preserve congruence?

A $(x, y) \rightarrow (-x, -y)$

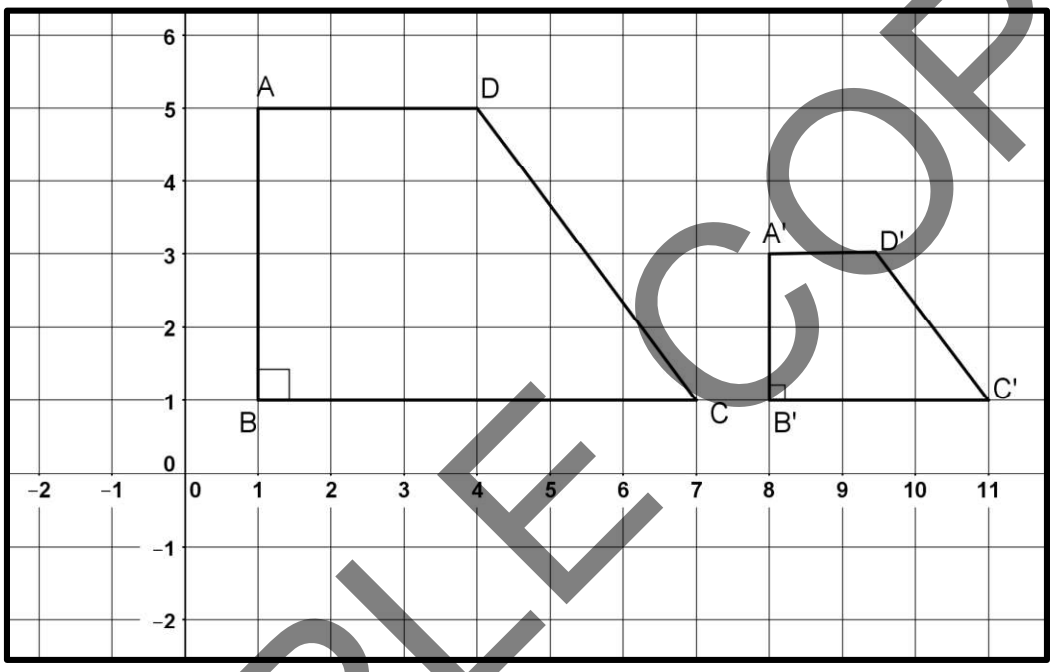
B $(x, y) \rightarrow (x + 3, y)$

C $(x, y) \rightarrow (3x, 3y)$

D $(x, y) \rightarrow (x, -y)$

3 (8.10A)

FigureABCD has been transformed to create *FigureA′B′C′D′*. Explain what type of transformation is represented and what properties of orientation or congruence are demonstrated.



F *FigureA′B′C′D′* is a dilation of *FigureABCD*, because orientation is preserved, but congruence is not preserved.

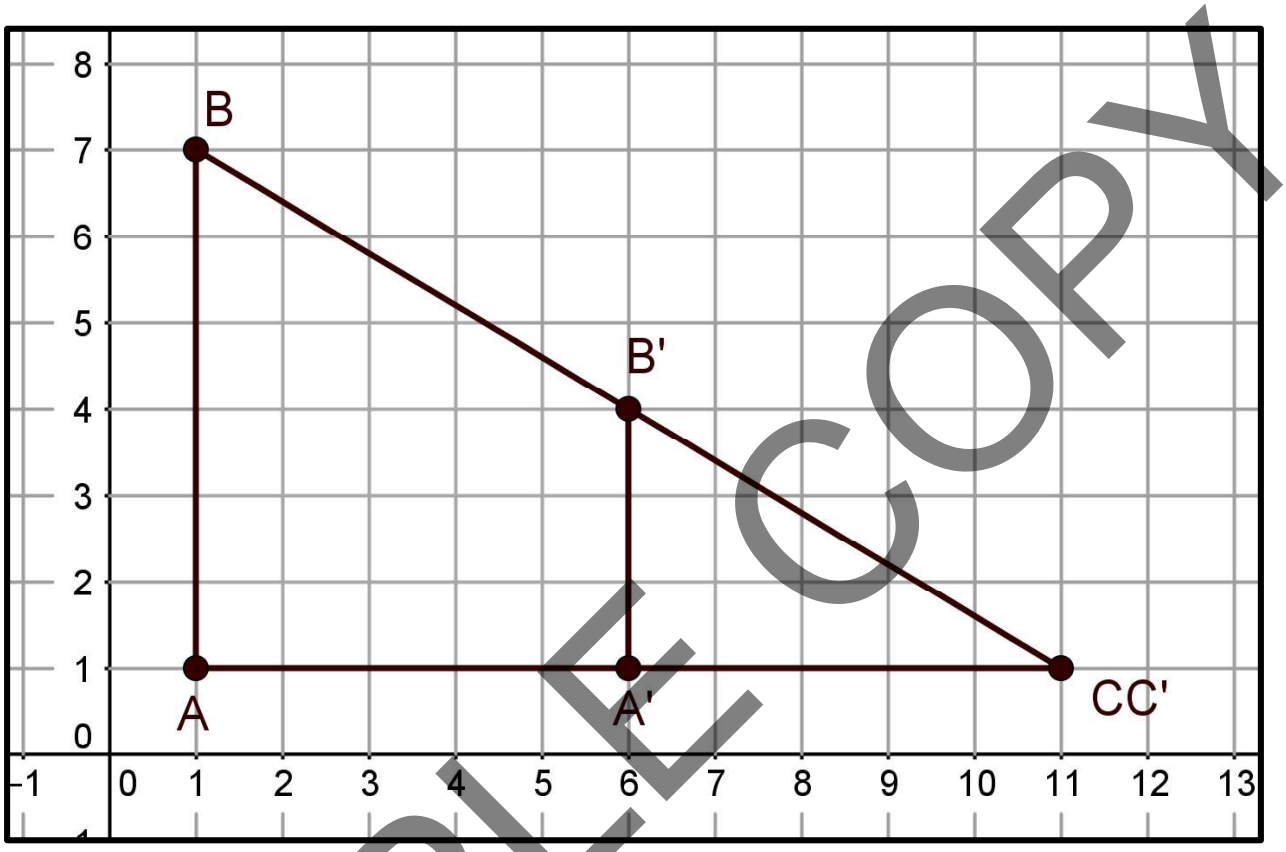
G *FigureA′B′C′D′* is a reflection of *FigureABCD*, because congruence is not preserved, but orientation and orientation of the vertices are preserved.

H *FigureA′B′C′D′* is a rotation of *FigureABCD*, because congruence is preserved, but orientation is not preserved.

J *FigureA′B′C′D′* is a dilation of *FigureABCD*, because congruence and orientation are preserved.

Spiral 89

1 (8.3B)



$\triangle A'B'C'$ is a dilation of $\triangle ABC$ with a scale factor of 0.5. If the perimeter of $\triangle A'B'C'$ is about 13.8 units, what is the approximate perimeter of $\triangle ABC$?

A 6.9 units

B 55.2 units

C 41.4 units

D 27.6 units

2 (8.10C)

Triangle ABC was reflected over the x-axis. Which rule describes the reflection that was applied to triangle ABC to create triangle $A'B'C'$?

F $(x, y) \rightarrow (x, -y)$

G $(x, y) \rightarrow (-x, -y)$

H $(x, y) \rightarrow (-x, y)$

J $(x, y) \rightarrow (y, -x)$

3 (8.10D)

The blue rectangle in a company logo is similar in shape to the red rectangle in the same logo. Each dimension of the blue rectangle is 1.5 times the corresponding dimension of the red rectangle. Which statement is true?

A The area of the blue rectangle is 4.5 times the area of the red rectangle.

B The area of the blue rectangle is 1.5 times the area of the red rectangle.

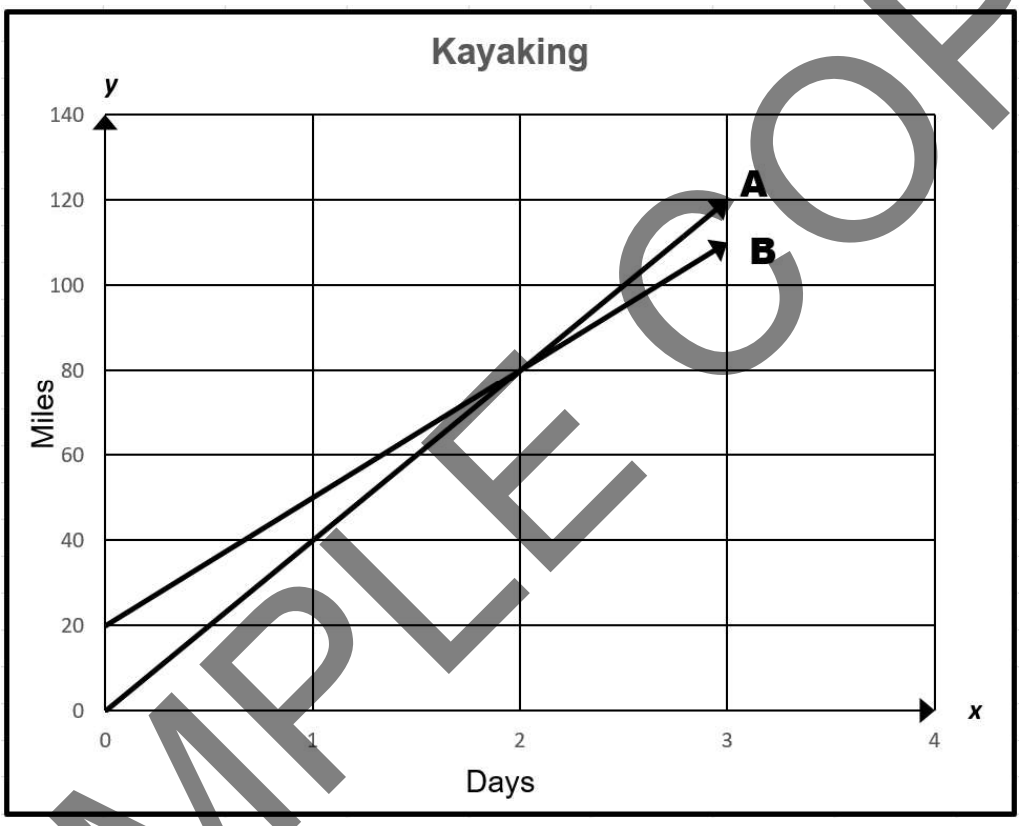
C The perimeter of the blue rectangle is 2.25 times the perimeter of the red rectangle.

D The perimeter of the blue rectangle is 1.5 times the perimeter of the red rectangle.

Spiral 90

1 (8.9A)

The graph models the linear relationship between the location on the river and the number of days paddling for two kayaks.



Based on the graph, which statement appears to be true?

F Kayak A passed Kayak B on Day 1.

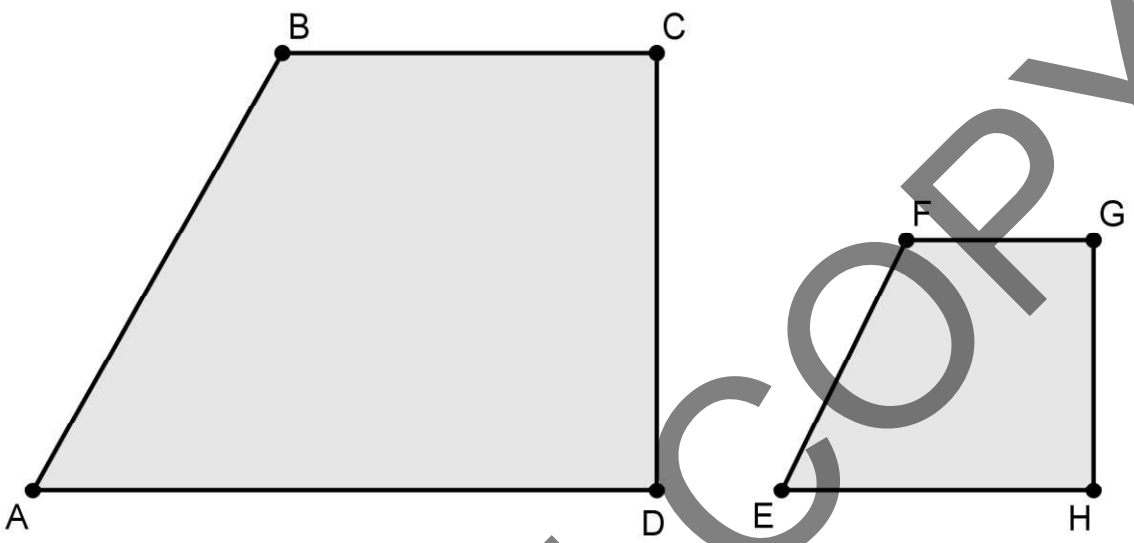
G Kayak B was about 40 miles ahead of Kayak A on Day 3.

H The 80-mile point was reached by both Kayak A and Kayak B on Day 2.

J Both Kayak A and Kayak B reached the 60-mile point on Day 3.

2 (8.3A)

EFGH is a dilation of *ABCD*.



Which segment completes the proportion?

$$\frac{AB}{EF} = \frac{BC}{?}$$

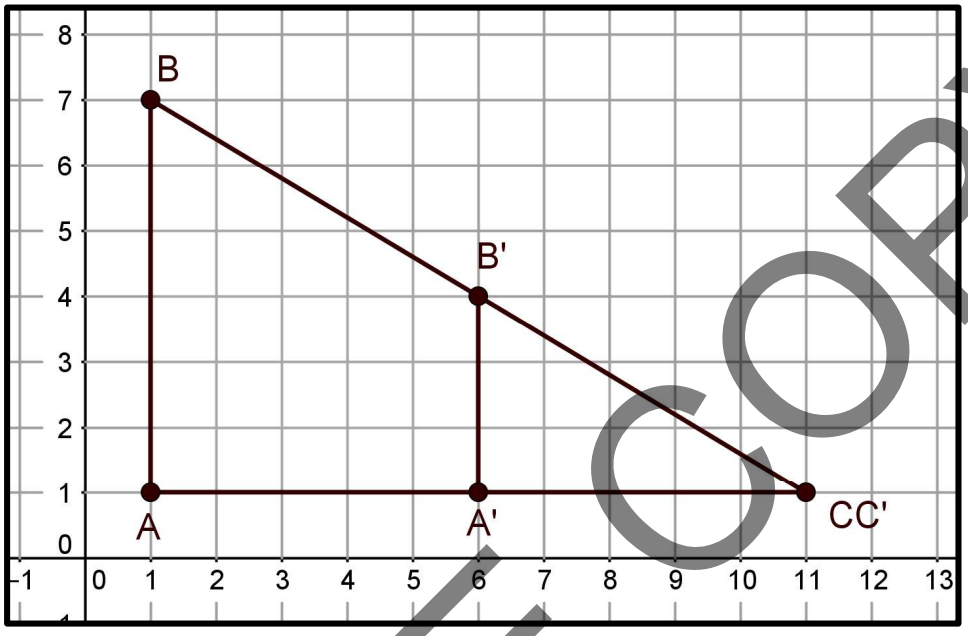
A *GH*

B *CD*

C *FG*

D *EH*

3 (8.3B)



$\triangle A'B'C'$ is a dilation of $\triangle ABC$ with a scale factor of 0.5. If the measure of $\angle A'B'C'$ is 59^0, what is the measure of $\angle ABC$?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

					.		
⊕	⓪	⓪	⓪	⓪		⓪	⓪
⊖	①	①	①	①		①	①
	②	②	②	②		②	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

Spiral 91

1 (8.2D)

Which list shows the numbers below in order from greatest to least?

$$\frac{1}{4},\ \frac{7}{25},\ 25.2\%,\ 0.264$$

A $\frac{1}{4},\ 25.2\%,\ \frac{7}{25},\ 0.264$

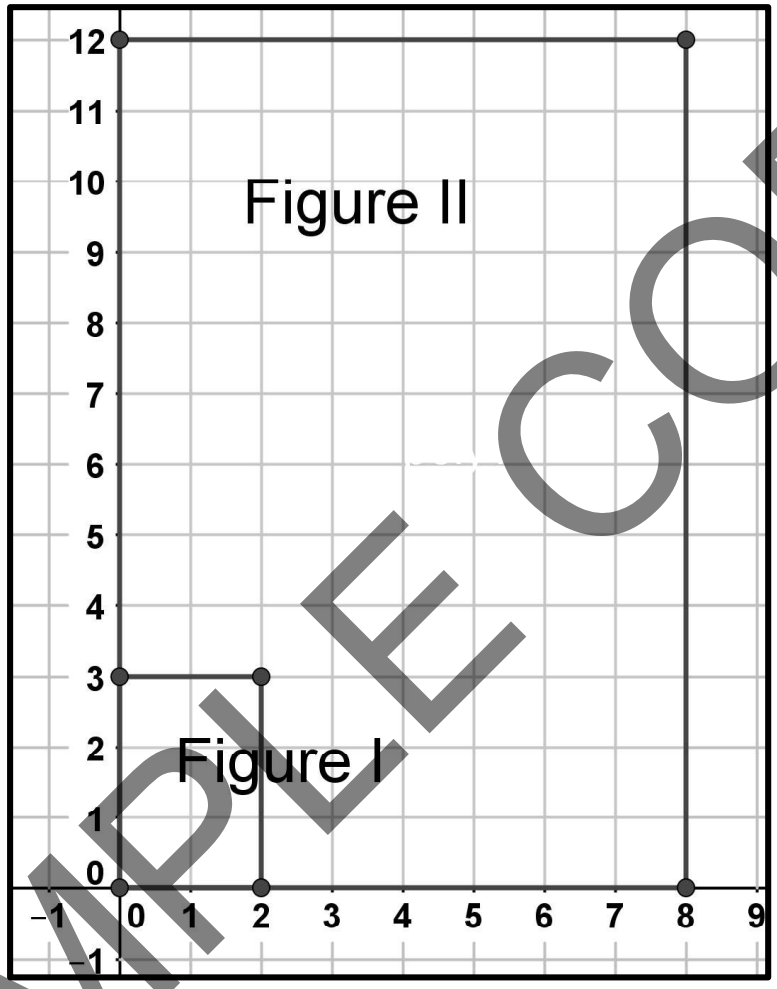
B $\frac{7}{25},\ 0.264,\ 25.2\%,\ \frac{1}{4}$

C $\frac{1}{4},\ 25.2\%,\ 0.264,\ \frac{7}{25}$

D $\frac{7}{25},\ \frac{1}{4},\ 25.2\%,\ 0.264$

2 (8.3C)

Figure I was dilated with the origin as the center of dilation to create Figure II.



Which rule best represents the dilation applied to Figure I to create Figure II?

F $(x,y) \rightarrow (2x,2y)$

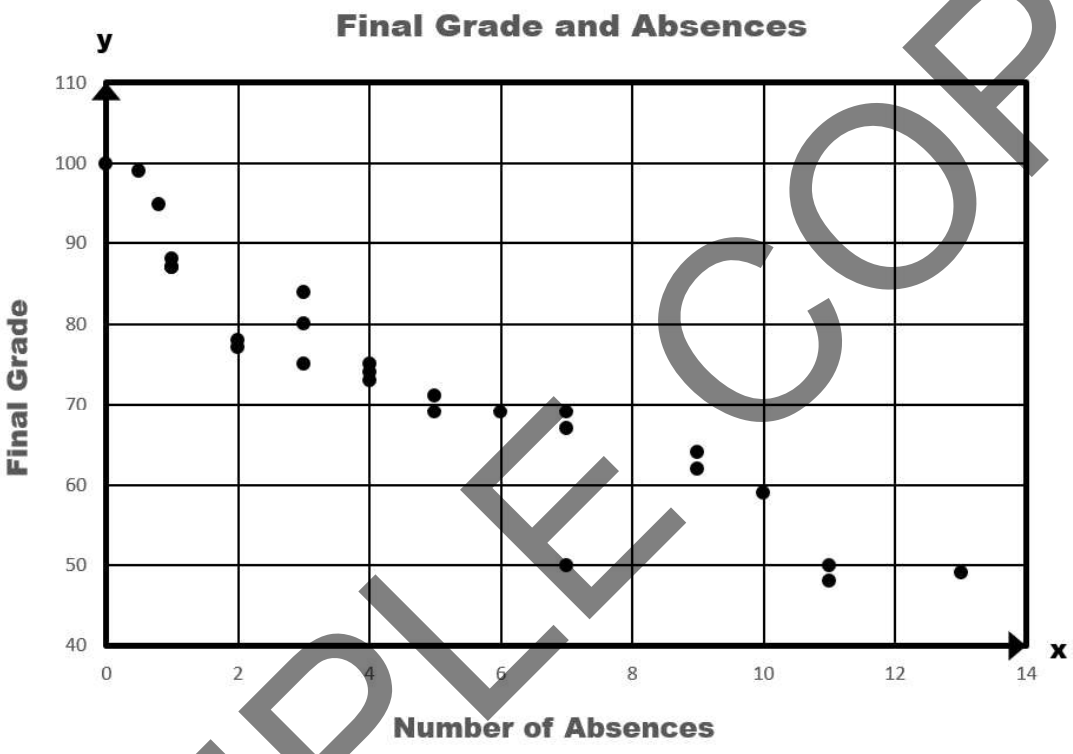
G $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

H $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

J $(x,y) \rightarrow (4x,4y)$

3 (8.11A)

A teacher recorded the number of absences from class and each student's final grade. The scatterplot below shows the numbers of absences and final grade for each student.



Which conclusion is best supported by the scatterplot?

A As the number of absences increases, grades increase.

B As the number of absences increases, grades remain the same.

C As the number of absences increases, grades decrease.

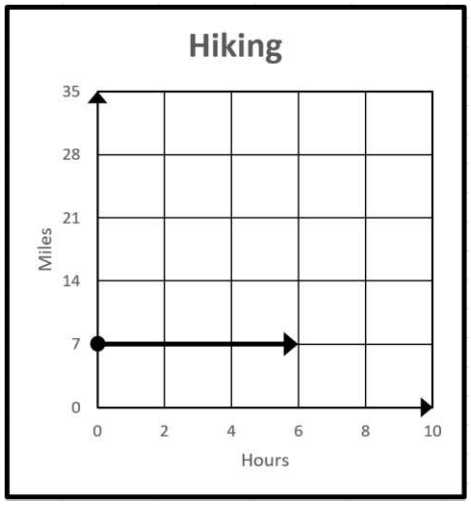
D There is no relationship between absences and grades.

Spiral 92

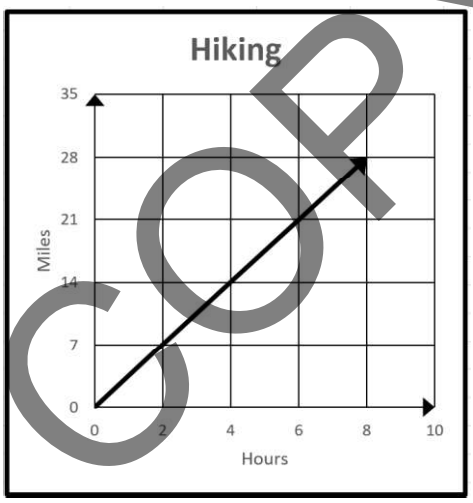
1 (8.4B)

A hiker covered 7 miles of trail every 2 hours. If she continues to hike at the same rate, which graph best represents her hiking speed in miles per hour?

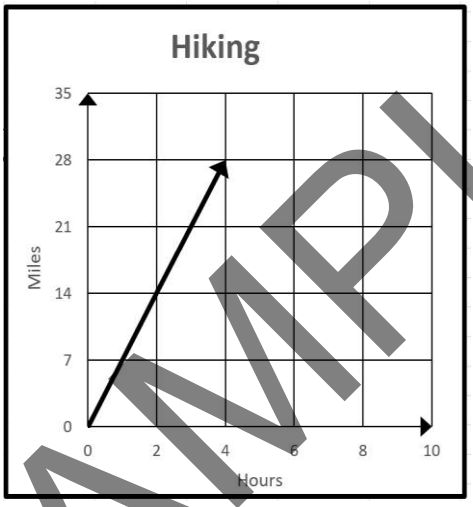
F



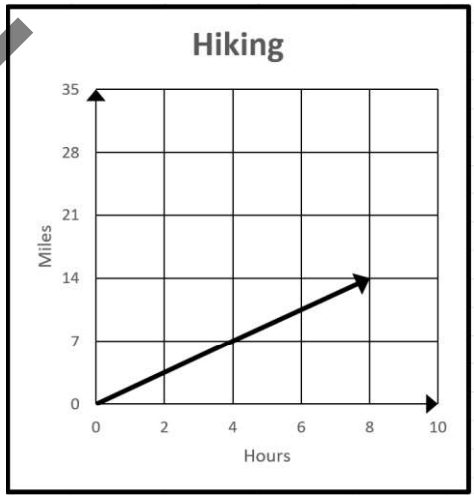
G



H

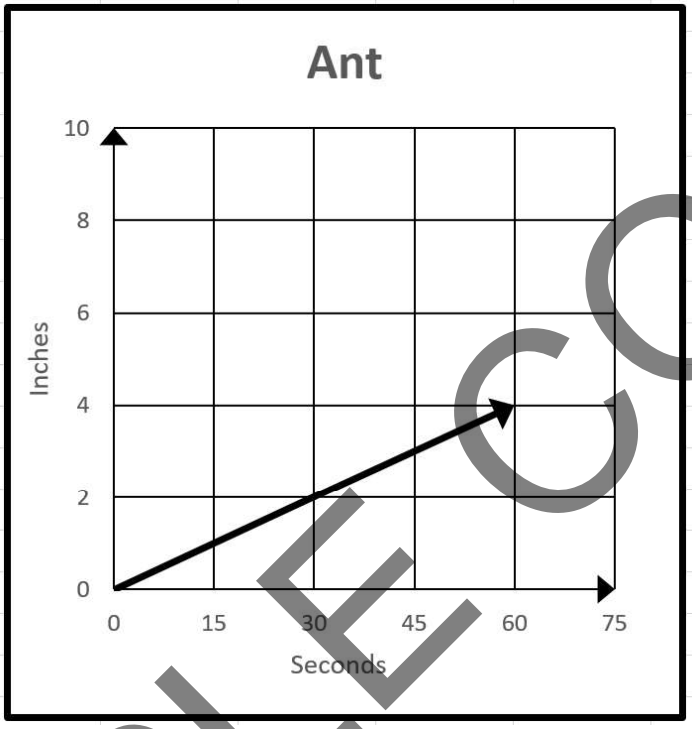


J



2 (8.5D)

The graph shows the average rate an ant moves across the sidewalk.



Based on the graph, which statement best describes the ant's rate of travel?

A The ant travels thirty inches every two seconds.

B The ant travels one inch every fifteen seconds.

C The ant travels fifteen inches per second.

D The ant travels four inches in half an hour.

3 (8.12A)

Bank A will loan a customer $2,000 for three years at a rate of 2% compounded annually. Bank B will loan a customer $2,000 for four years at a rate of 1.5% compounded annually. What is the difference in the interest paid on each of these loans?

F $2.42

G $122.42

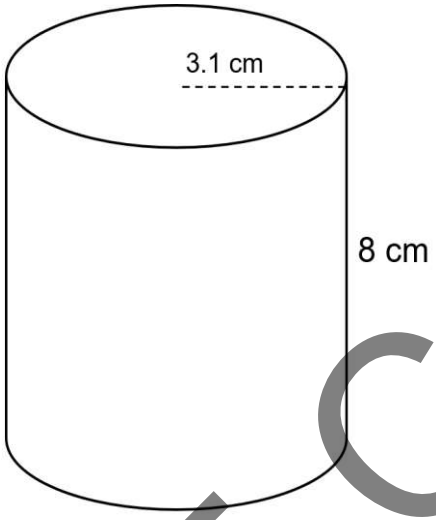
H $122.73

J $245.15

Spiral 93

1 (8.6A)

A cylinder and its dimensions are shown below.



One equation for calculating the volume of a cylinder is $V = Bh$, where B represents the area of the base of the cylinder. Which expression can be used to find the value of B, in square centimeters, for this cylinder?

A $\pi(8)^2$

B $\pi(3.1)^2$

C $\pi(6.2)^2$

D $2\pi(3.1)$

2 (8.12D)

To encourage children to open a savings account, a bank creates two Junior Accounts.

Account One (for children 5 – 10 years old) pays 5% annual simple interest.

Account Two (for children 11 – 16) years old pays 5% compounded annually.

If a 5-year-old and her brother who is 11, each invest $50 in an account, what will their combined accounts be worth in 5 years, if no other money is deposited or withdrawn?

F $63.81

G $216.13

H $126.31

J $1.31

3 (8.12G)

Tuition at the college Eduardo plans to attend costs $21,000 per year. His counselor recommends that Eduardo set aside an additional 18% of that amount to cover room, meals, books, and fees. What will be the total cost for one year of college for Eduardo, including the money for room, meals, books, and fees?

A $22,420

B $24,780

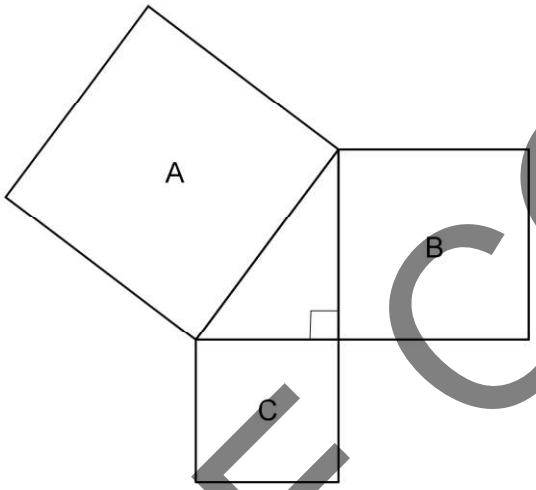
C $32,600

D $18,200

Spiral 94

1 (8.6C)

A student is given the diagram below and instructed to cover each square region with congruent square tiles without leaving gaps or overlapping any tiles.



Based on this activity, which statement is true?

F The number of square tiles used to cover Region A plus the number of tiles used to cover the center right triangle will equal the number of square tiles used to cover Region C.

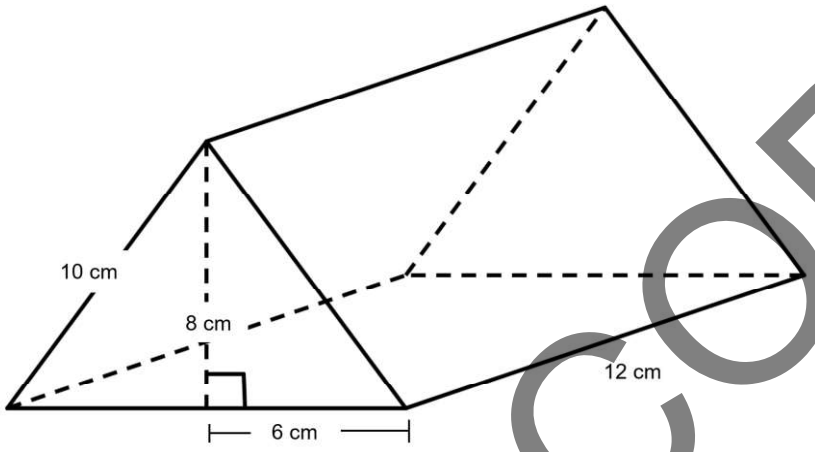
G The number of square tiles used to cover Region B minus the number of tiles used to cover Region A will equal the number of square tiles used to cover Region C.

H The number of square tiles used to cover Region A plus the number of tiles used to cover Region C will equal the number of square tiles used to cover the center right triangle.

J The number of square tiles used to cover Region A minus the number of tiles used to cover Region B will equal the number of square tiles used to cover Region C.

2 (8.7B)

A triangular prism and its dimensions are shown in the diagram.



What is the lateral surface area in square centimeters?

Record your answer and fill in the bubbles. Be sure to use the correct place value.

					.		
⊕	⓪	⓪	⓪	⓪		⓪	⓪
⊖	①	①	①	①		①	①
	②	②	②	②		②	②
	③	③	③	③		③	③
	④	④	④	④		④	④
	⑤	⑤	⑤	⑤		⑤	⑤
	⑥	⑥	⑥	⑥		⑥	⑥
	⑦	⑦	⑦	⑦		⑦	⑦
	⑧	⑧	⑧	⑧		⑧	⑧
	⑨	⑨	⑨	⑨		⑨	⑨

3 (8.2D)

Which of the following numbers is the least?

$$\frac{2}{7}, \frac{9}{32}, 30\%, 0.27$$

F 30%

G $\frac{9}{32}$

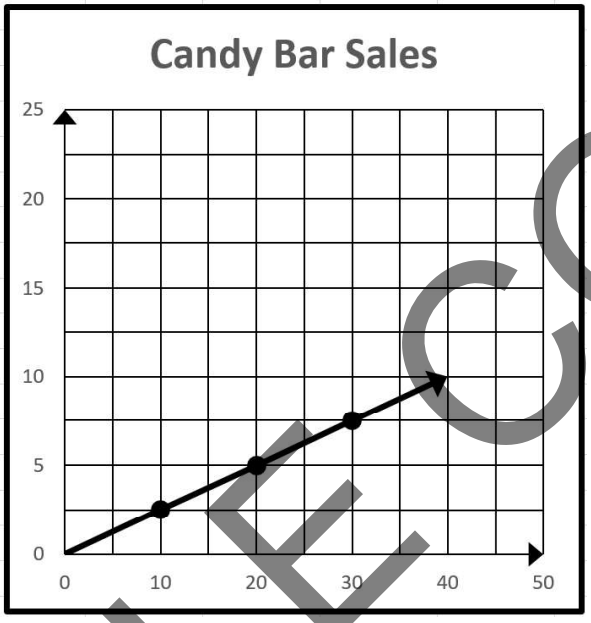
H 0.27

J $\frac{2}{7}$

Spiral 95

1 (8.4B)

The graph shows the earnings per candy bar sold by the school band.



Based on the graph, which statement best describes band's earnings in relation to the number of candy bars sold?

A The school band earns $2.50 for every ten candy bars sold.

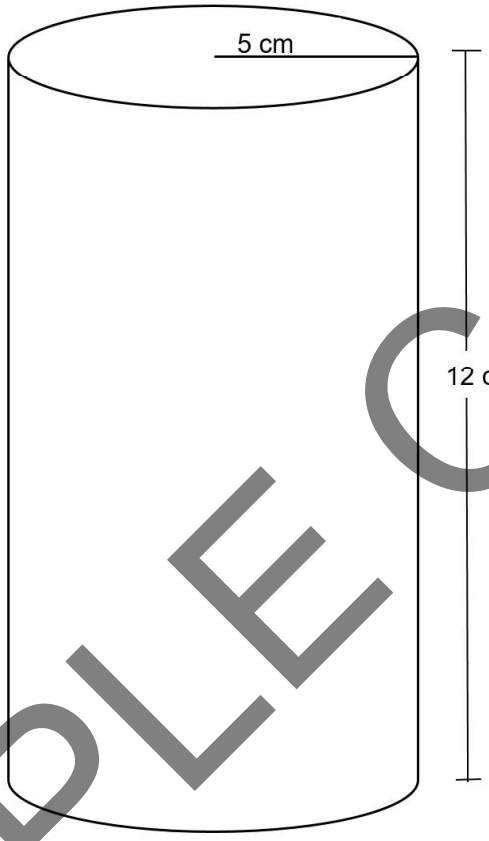
B The school band earns $10 for every 5 candy bars sold.

C The school band earns $2.50 for every ten candy bars sold up to 30, then $0.50 for each bar over 30.

D The school band earns a flat rate of $300 for selling candy bars.

2 (8.7A)

The height and radius of a cylinder are shown.



Which measurement is closest to the volume of the cylinder in cubic centimeters?

F 235.5 cm^3

G 942 cm^3

H 3768 cm^3

J 2260.8 cm^3

3 (8.8C)

If $12x + 11 \geq 5(4x - 1)$, what values of x makes the inequality true?

A $x \leq 6$

B $x \geq 2$

C $x \geq 6$

D $x \leq 2$

Spiral 96

1 (8.12C)

A teacher has her students set up mock savings accounts to learn about compound interest and investment. If a student invests $75 into an account that earns 2.8% compounded annually, and no other money is deposited or withdrawn, which of the following statement is true?

F After 10 years the student's account will be worth $23.85.

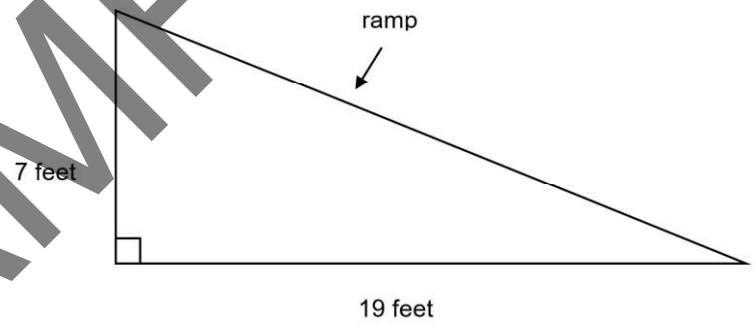
G After 10 years the student will earn $13.81 on his investment.

H After 10 years the student's account will be worth $98.85.

J After 10 years the student's account will be worth $13.81.

2 (8.7C)

A ramp is constructed to help move materials onto a loading dock.



Which measurement is closest to the length of the ramp in feet?

A 17.7 ft.

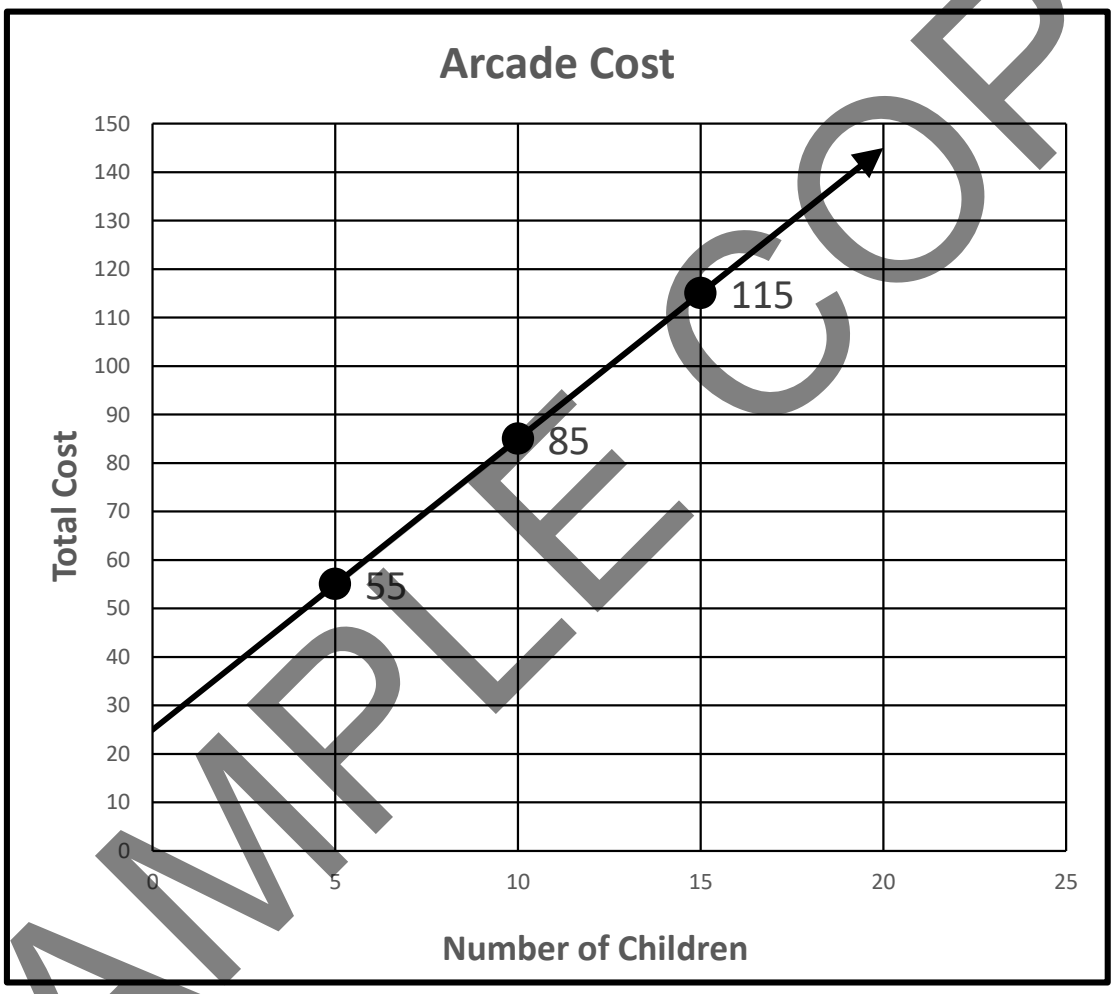
B 24.5 ft.

C 20.2 ft.

D 18.2 ft.

3 (8.4C)

The total cost for holding a birthday party at an arcade includes a cost per child and a flat rate for cleaning. The graph models the function, where x represents the number of children attending the party.



What is the flat rate charged for cleaning the arcade?

F $25

G $30

H $5

J $6

Spiral 97

1 (8.12D)

Blanca has $8,000 to invest. She researches two different accounts.

- Account A pays 2.8% interest compounded annually.
- Account B pays 4% annual simple interest.

She invests $4,000 in Account A and $4,000 in Account B. What are her combined investments worth after 7 years, if no other money is deposited or withdrawn?

A $9,973.02

B $4,853.02

C $5,120.00

D $10,853.02

2 (8.5I)

The cost of ordering pizza requires a delivery fee of $5 and $12 per pizza. Which equation represents the total cost of the order (C) as a function of the number of pizzas purchased (p)?

F $C = 12p + 5$

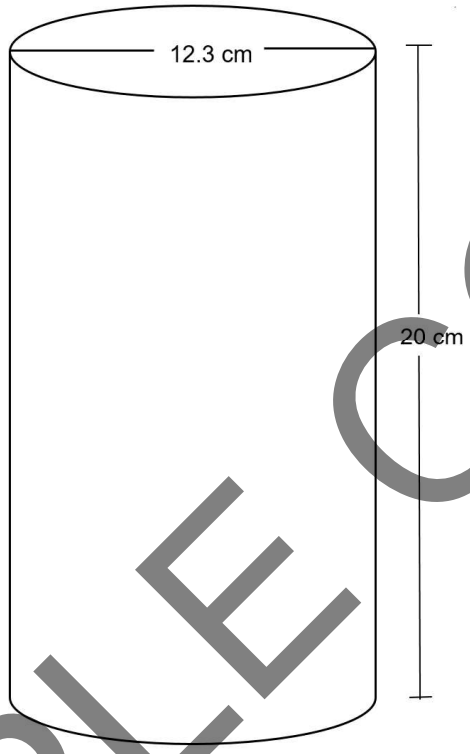
G $C = 5p + 12$

H $C = 5(h + 12)$

J $C = 12(p + 5)$

3 (8.7A)

The height and diameter of a cylinder are shown.



Which measurement is closest to the volume of the cylinder in cubic centimeters?

A 756.45 cm^3

B 9501.01 cm^3

C 3862.2 cm^3

D 2375.25 cm^3

SpiralEd Solutions

Spiral 98

1 (8.11B)

The list shows the number of snow cones sold over nine days.

25, 34, 57, 84, 98, 77, 61, 25, 48

What is the mean absolute deviation for this list?

F 20.93

G 62.29

H 56.56

J 20.61

2 (8.12D)

Bailey has $700 to invest. She researches two different accounts.

- Account A pays 3.6% interest compounded annually.
- Account B pays 3.2% annual simple interest.

She invests $200 in Account A and $500 in Account B. What are her combined investments worth after 12 years, if no other money is deposited or withdrawn?

A $692.00

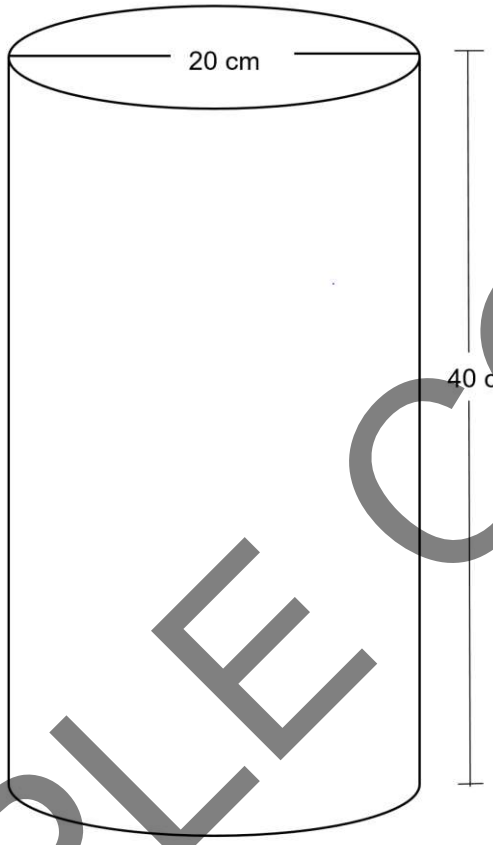
B $305.74

C $968.80

D $997.74

3 (8.7B)

A cylinder and its dimensions are shown in the diagram.



Which equation can be used to determine the total surface area of the cylinder?

F $S = 2\pi \cdot 10 \cdot 40$

G $S = (2\pi \cdot 20 \cdot 40) + 2\pi 10^2$

H $S = 2 \cdot 20 \cdot 40$

J $S = (2\pi \cdot 10 \cdot 40) + 2\pi 10^2$

SpiralEd Solutions

Spiral 99

1 (8.5I)

Which function is represented by the set of ordered pairs?

{(-5,-13), (-3,-9), (0,-3), (3,3), (5,7)}

A $y = 2x - 3$

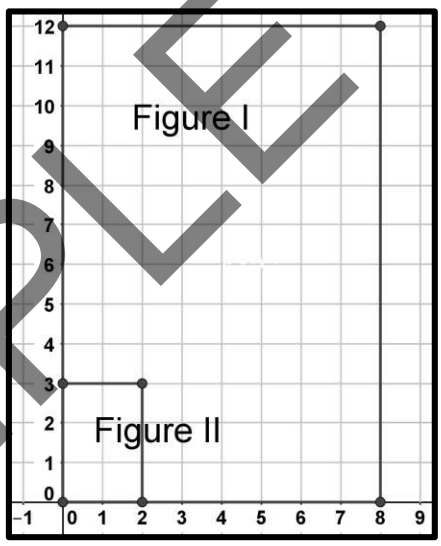
B $y = -2x + 3$

C $y = -2x - 3$

D $y = 2x + 3$

2 (8.3C)

Figure I was dilated with the origin as the center of dilation to create Figure II.



Which rule best represents the dilation applied to Figure I to create Figure II?

F $(x,y) \rightarrow (2x,2y)$

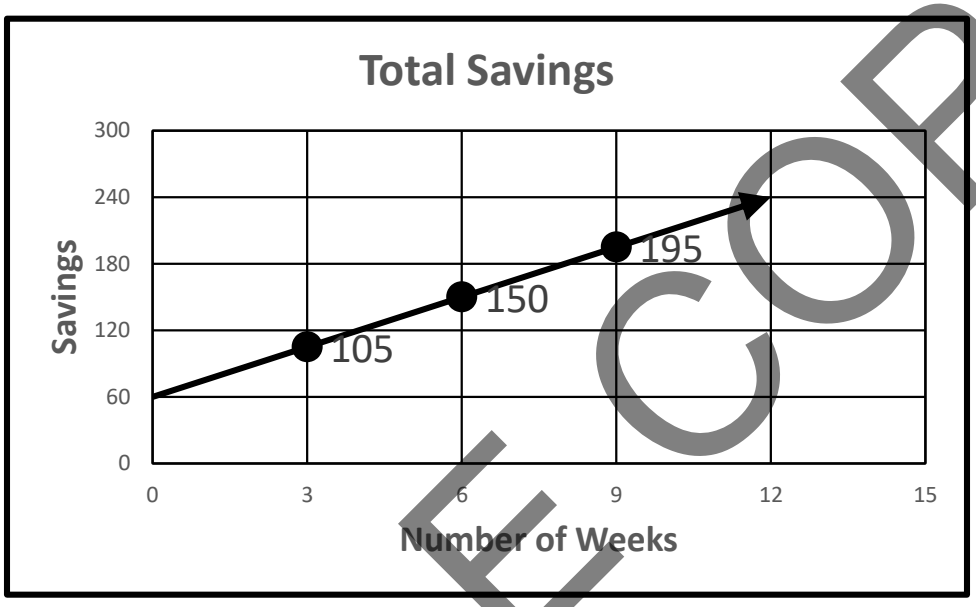
G $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

H $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

J $(x,y) \rightarrow (4x,4y)$

3 (8.4C)

Brynn has a savings account that she started with the money her parents gave her for her birthday. Each week she deposits the money she earns lifeguarding. The graph shows the amount of money Brynn had at the end of x weeks.



How much money did Brynn use to open the account, and how much does she deposit each week?

A Brynn opened the account with $105 and added $45 each week.

B Brynn opened the account with $60 and added $45 each week.

C Brynn opened the account with $60 and added $15 each week.

D Brynn opened the account with $60 and added $105 each week.

SpiralEd Solutions

Spiral 100

1 (8.5G)

Which statement describes the table?

x	y
-3	2
-1	4
1	6
3	8
5	10

F The table represents *y* as a function of *x*, because each *y*-value corresponds to exactly one *x*-value.

G The table does not represent *y* as a function of *x*, because two of the *x*-values correspond to the same *y*-value.

H The table represents *y* as a function of *x*, because each *x*-value corresponds to exactly one *y*-value.

J The table does not represent *y* as a function of *x*, because two of the *y*-values correspond to the same *x*-value.

2 (8.10C)

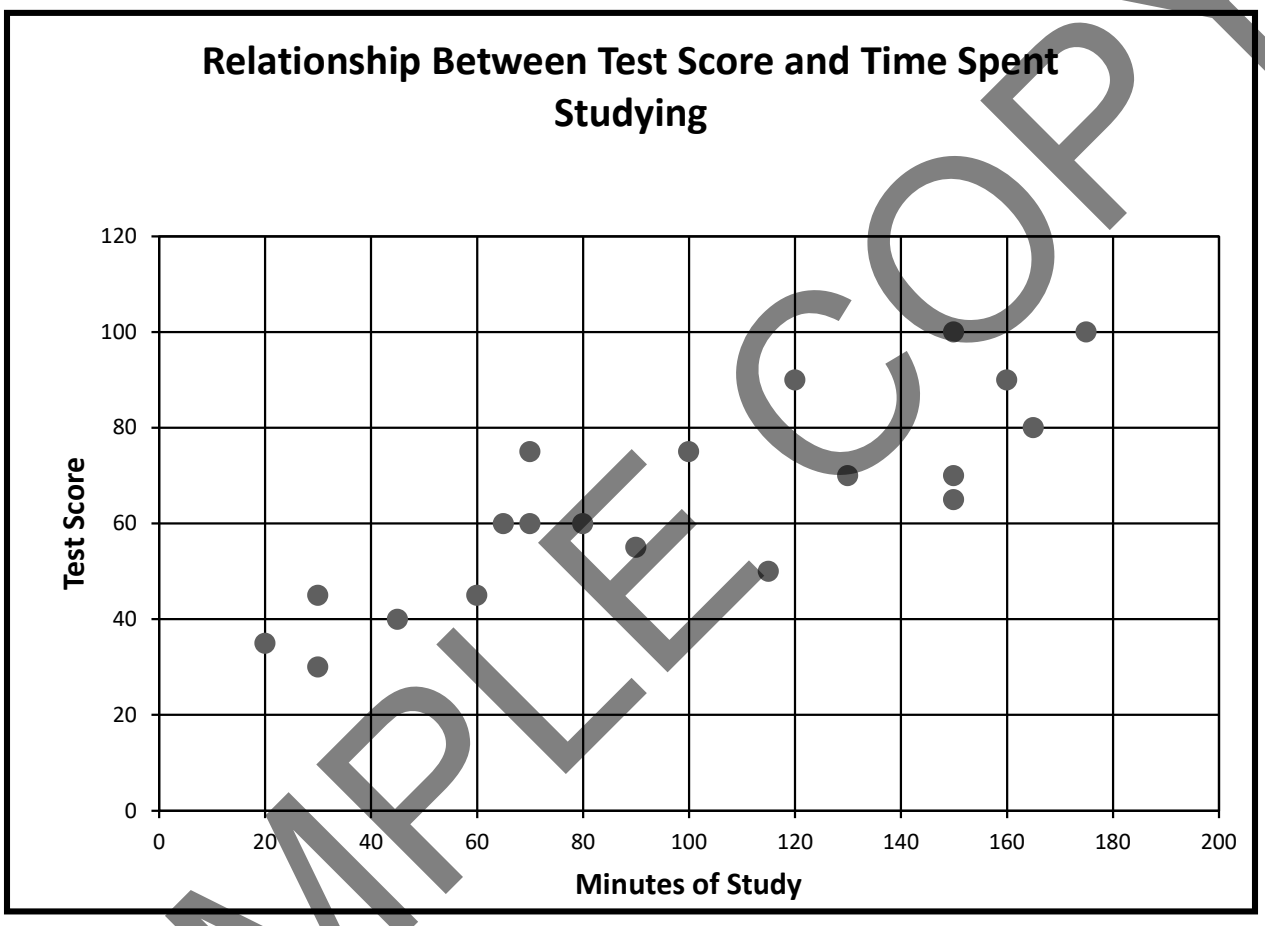
Triangle ABC was rotated 180^0. Which rule describes the rotation that was applied to triangle ABC to create triangle $A'B'C'$?

A $(x,y) \rightarrow (x,-y)$ **B** $(x,y) \rightarrow (-x,-y)$

C $(x,y) \rightarrow (-x,y)$ **D** $(x,y) \rightarrow (y,-x)$

3 (8.5D)

The graph shows the relationship between student test scores and the amount of time spent studying.



Based on this information predict the score for a student who spent 140 minutes studying for the test.

F 80

G 50

H 20

J 60

SpiralEd Solutions

Spiral 101

1 (8.12D)

Obed has $4,500 to invest. He researches two different accounts.

- Account A pays 2% interest compounded annually.
- Account B pays 2.2% annual simple interest.

He invests $2,000 in Account A and $2,500 in Account B. What are his combined investments worth after 10 years, if no other money is deposited or withdrawn?

A $6,829.00

B $5,487.99

C $3,050.00

D $2,437.99

2 (8.12D)

Alex has $15,000 to invest. He researches two different accounts.

- Account A pays 1.6% interest compounded annually.
- Account B pays 1.8% annual simple interest.

He invests $5,000 in Account A and $10,000 in Account B. What are his combined investments worth after 12 years, if no other money is deposited or withdrawn?

F $18,367.24

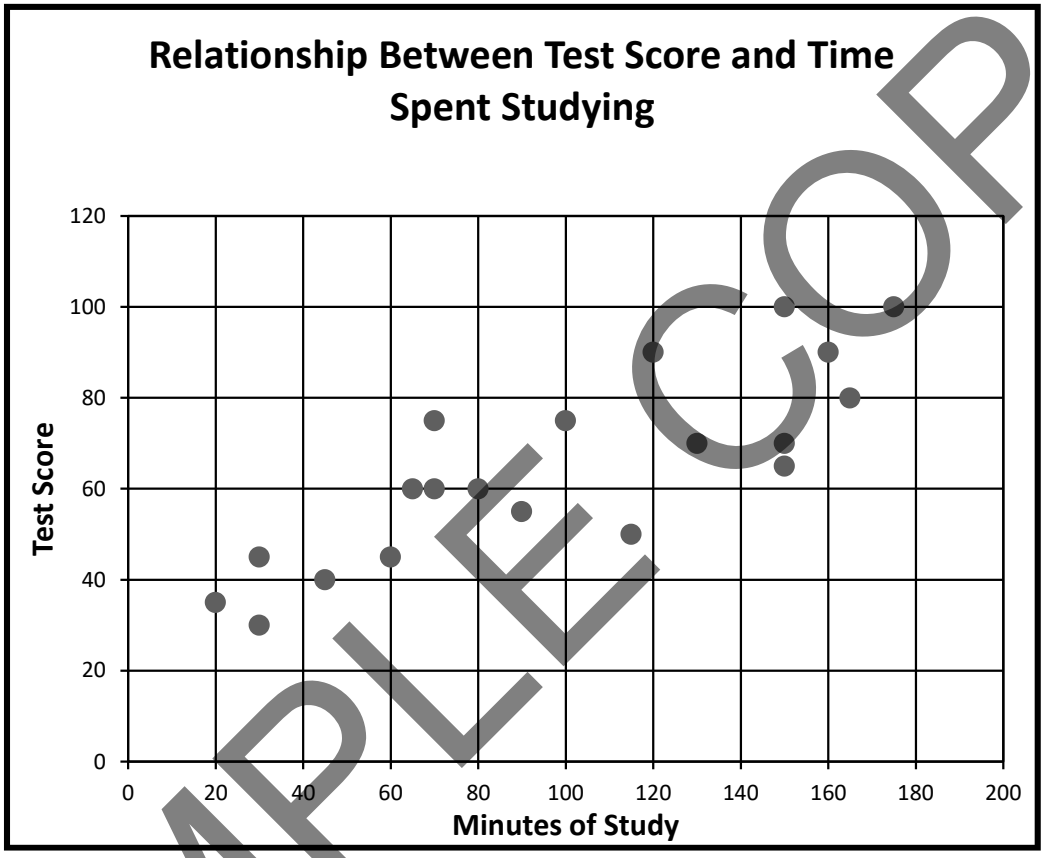
G $12,160.00

H $18,209.15

J $6,049.15

3 (8.5D)

The graph shows the relationship between student test scores and the amount of time spent studying.



Based on this information, estimate how long would a student need to study to make a 90 on the test.

A 80 minutes

B 60 minutes

C 180 minutes

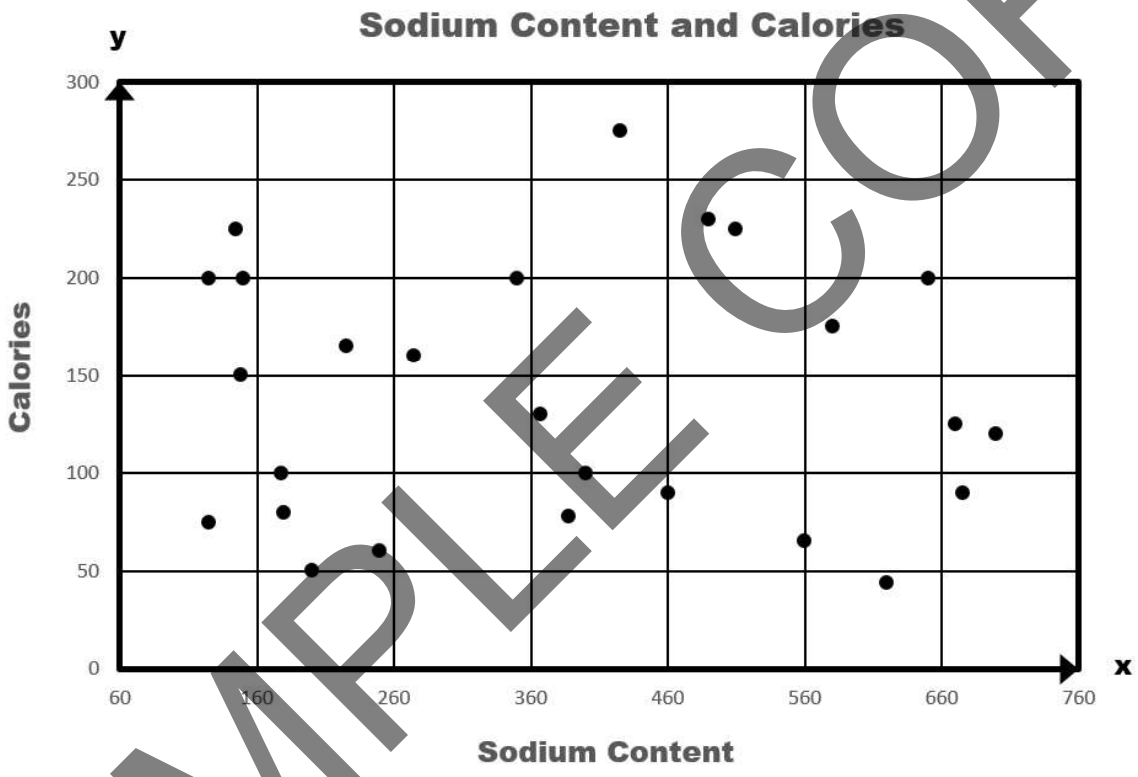
D 140 minutes

SpiralEd Solutions

Spiral 102

1 (8.11A)

A nutritionist tracked the amount of sodium and number of calories in pre-packaged snacks. The scatterplot below shows the amount of sodium and number of calories for the snacks she analyzed.



Which conclusion is best supported by the scatterplot?

F As the amount of sodium increases, calories increase.

G As the amount of sodium increases, calories remain the same.

H As the amount of sodium increases, calories decrease.

J There is no clear relationship between the amount of sodium and number of calories.

2 (8.12A)

Bank A offers a loan rate of 4% simple interest on a 2-year loan and a 3% simple interest on a 3-year loan. What is the difference in interest for the two loans on a $2,000 loan?

A $60

B $20

C $180

D $160

3 (8.12C)

In a financial literacy class, students were asked to complete the following table to show return on initial investment, if no other money is deposited or withdrawn.

Initial Investment	Number of Years	Annual Percentage Rate	Compounded	Total Interest Earned	Account Total
$1,000	18	2.75	annually	(w)	(x)
$2,000	21	2.4	annually	$1,291.01	$3,291.01
$500	15	3.2	annually	(y)	(z)

What should the student record for (w) and (z)?

F (w) $629.57; (z) $301.98

G (w) $629.57; (z) $801.98

H (w) $129.57; (z) $301.98

J (w) $301.98.57; (z) $1,629.57

SpiralEd Solutions

Spiral 103

1 (8.7A)

A sphere has a radius of 5 inches. Which measurement is closest to the volume of the sphere in cubic inches?

A 523.3 in^3

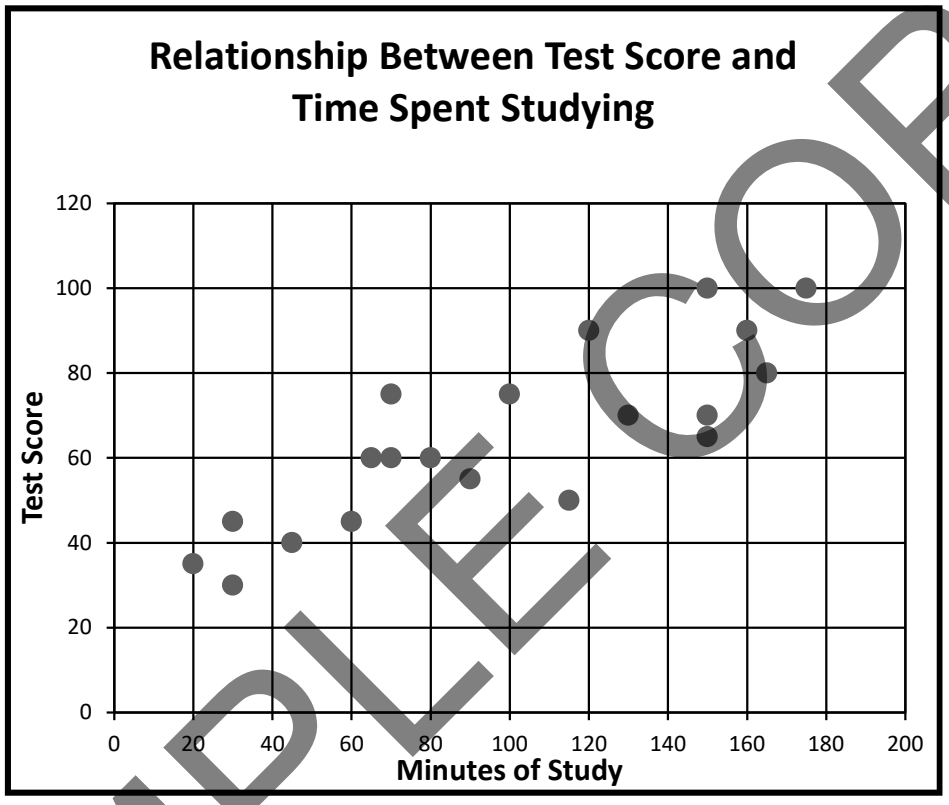
B 392.5 in^3

C 166.7 in^3

D 104.7 in^3

2 (8.5D)

The graph shows the relationship between student test scores and the amount of time spent studying.



Based on this information, estimate how long a student studied who made a 60 on the test studied.

F 80 minutes

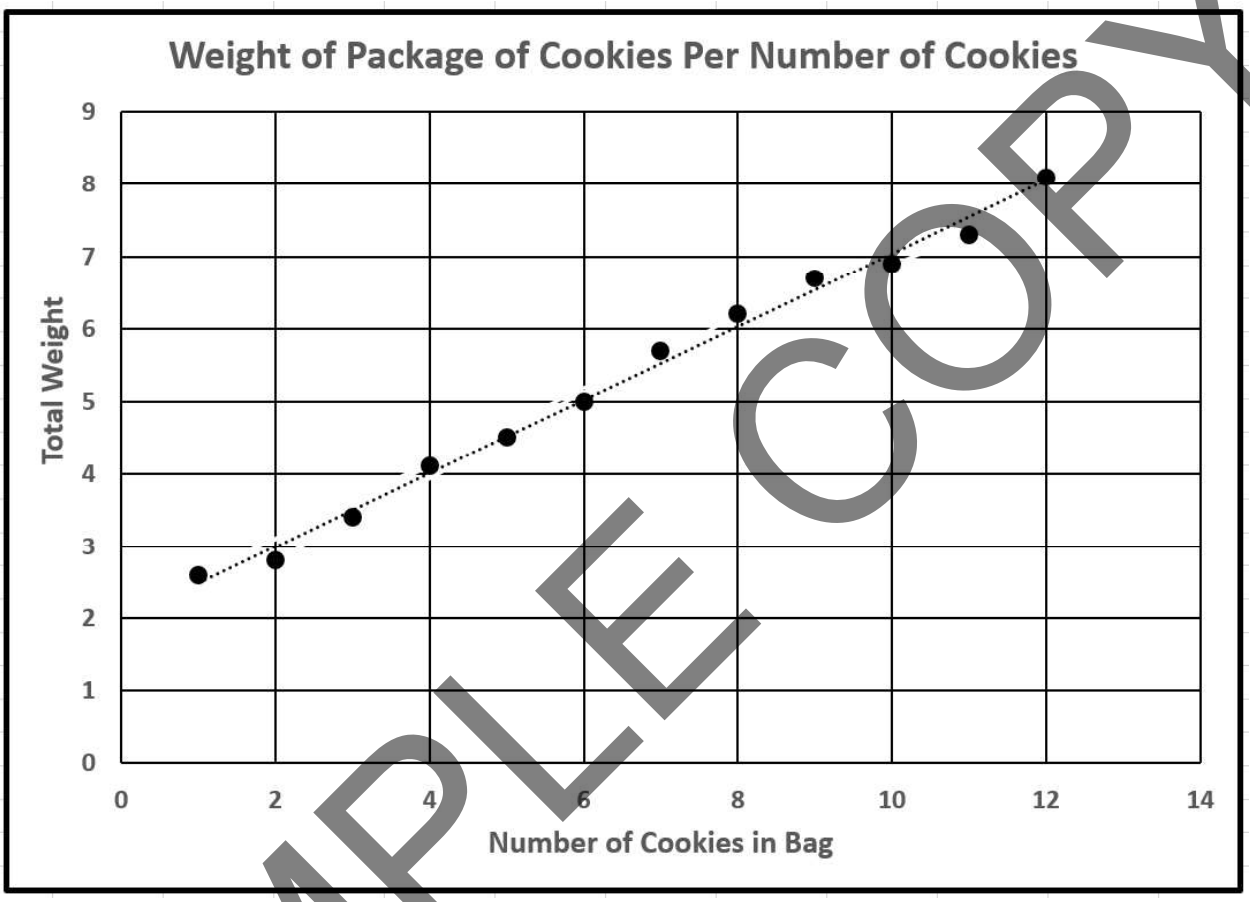
G 60 minutes

H 160 minutes

J 140 minutes

3 (8.5D)

The graph shows the relationship between the number of cookies in a package and the total weight of the package in ounces.



Estimate the weight of a package containing 7 cookies.

A 10 ounces

B 6.2 ounces

C 9.8 ounces

D 5.6 ounces

Spiral 104

1 (8.12D)

Lizzy invested $2,000 in an account that pays 2% interest compounded annually. Lizzy will not make any additional deposits or withdrawals. How much will the account be worth at the end of 10 years??

F $2,305.74

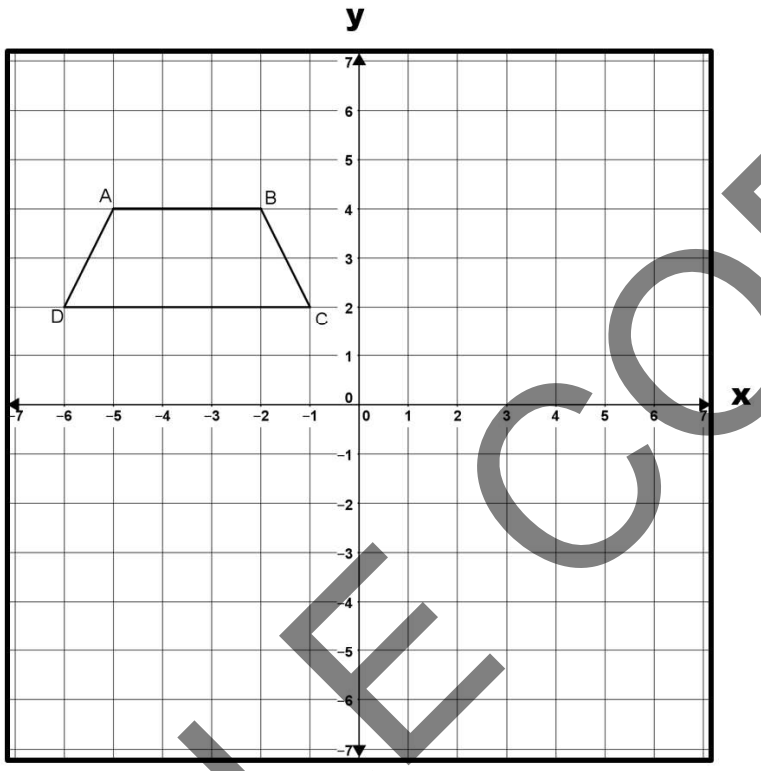
G $2,853.02

H $2,437.99

J $2,400.00

2 (8.10C)

The coordinate grid shows trapezoid $ABCD$.



Trapezoid $ABCD$ is rotated 90^0 counterclockwise about the origin to create trapezoid $A'B'C'D'$. Which rule describes this transformation?

A $(x,y) \rightarrow (x,-y)$

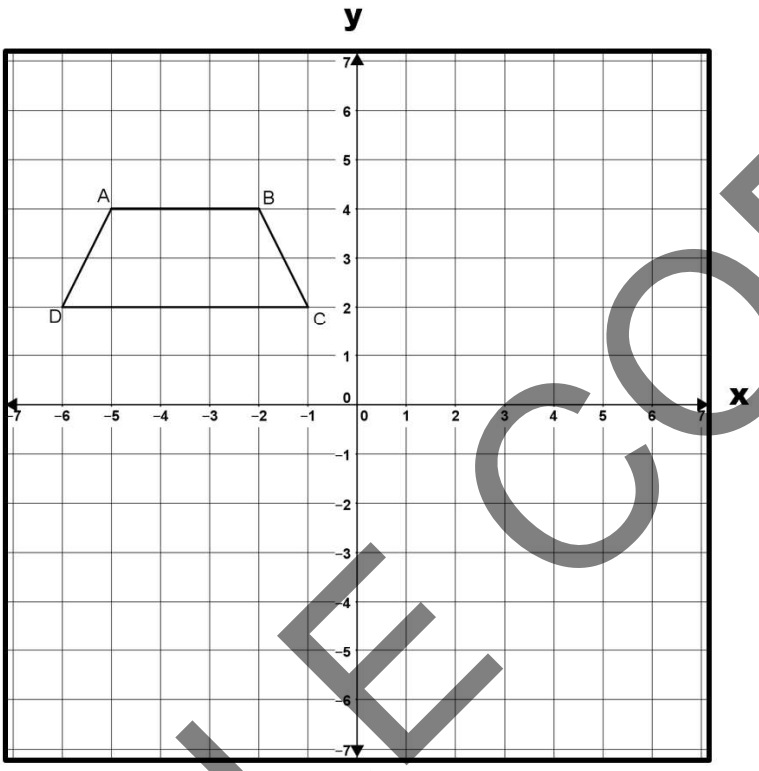
B $(x,y) \rightarrow (-y,x)$

C $(x,y) \rightarrow (-x,y)$

D $(x,y) \rightarrow (y,-x)$

3 (8.10C)

The coordinate grid shows trapezoid $ABCD$.



Trapezoid $ABCD$ is rotated 90^0 clockwise about the origin to create trapezoid $A'B'C'D'$. Which rule describes this transformation?

F $(x, y) \rightarrow (x, -y)$

G $(x, y) \rightarrow (-y, x)$

H $(x, y) \rightarrow (-x, y)$

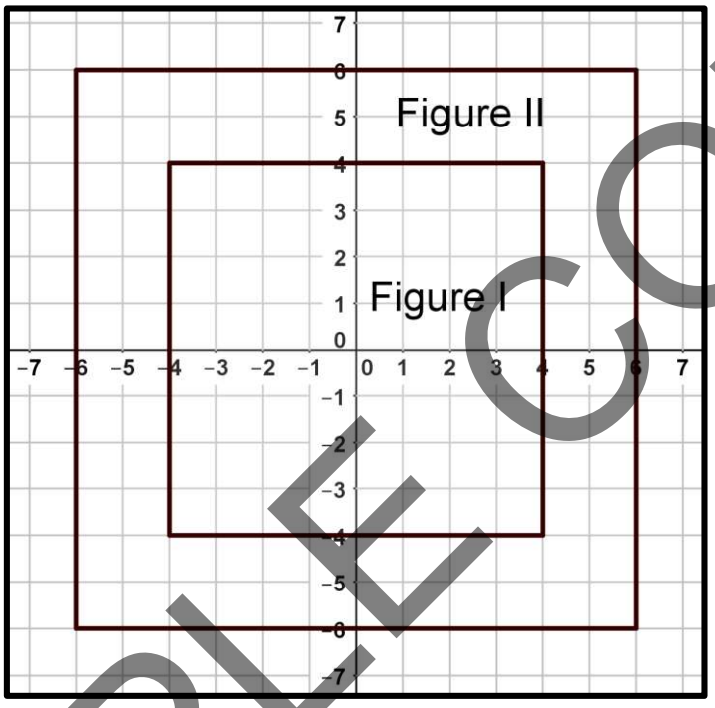
J $(x, y) \rightarrow (y, -x)$

.

Spiral 105

1 (8.3C)

Figure I was dilated with the origin as the center of dilation to create Figure II.



Which rule best represents the dilation applied to Figure I to create Figure II?

A $(x,y) \rightarrow (\frac{2}{3}x, \frac{2}{3}y)$

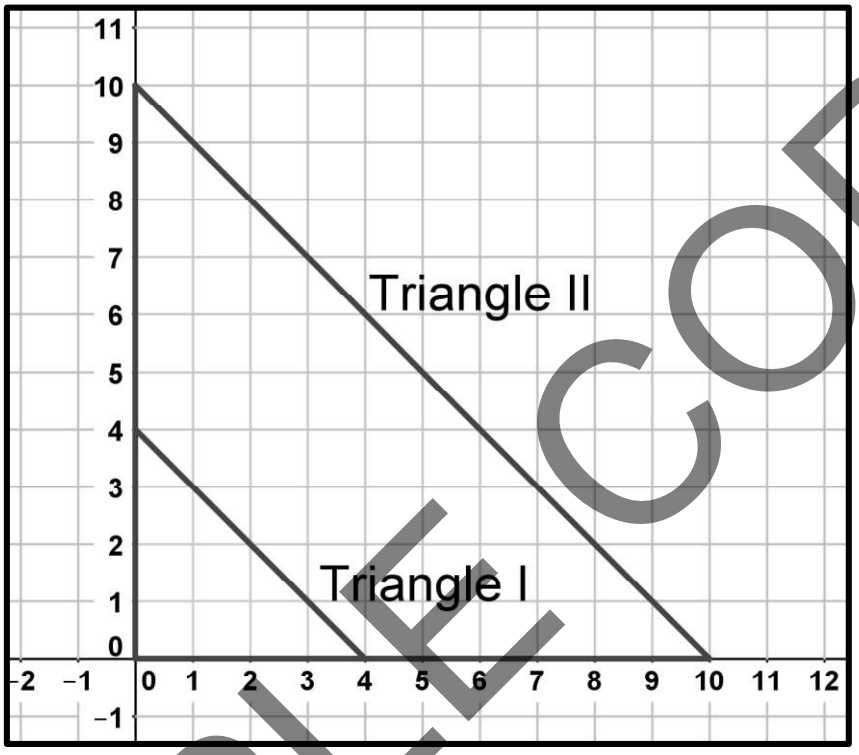
B $(x,y) \rightarrow (\frac{1}{4}x, \frac{1}{4}y)$

C $(x,y) \rightarrow (4x,4y)$

D $(x,y) \rightarrow (\frac{3}{2}x, \frac{3}{2}y)$

2 (8.3C)

Triangle I was dilated with the origin as the center of dilation to create Triangle II.



Which rule best represents the dilation applied to Triangle I to create Triangle II?

F $(x, y) \rightarrow (4x, 4y)$

G $(x, y) \rightarrow (\frac{2}{5}x, \frac{2}{5}y)$

H $(x, y) \rightarrow (\frac{5}{2}x, \frac{5}{2}y)$

J $(x, y) \rightarrow (\frac{4}{10}x, \frac{4}{10}y)$

3 (8.12D)

Sebastian invested $3,000 in an account that pays 2.4% annual simple interest. Sebastian will not make any additional deposits or withdrawals. How much will Sebastian's account be worth after 7 years?

A $2,980.00

B $3,504.00

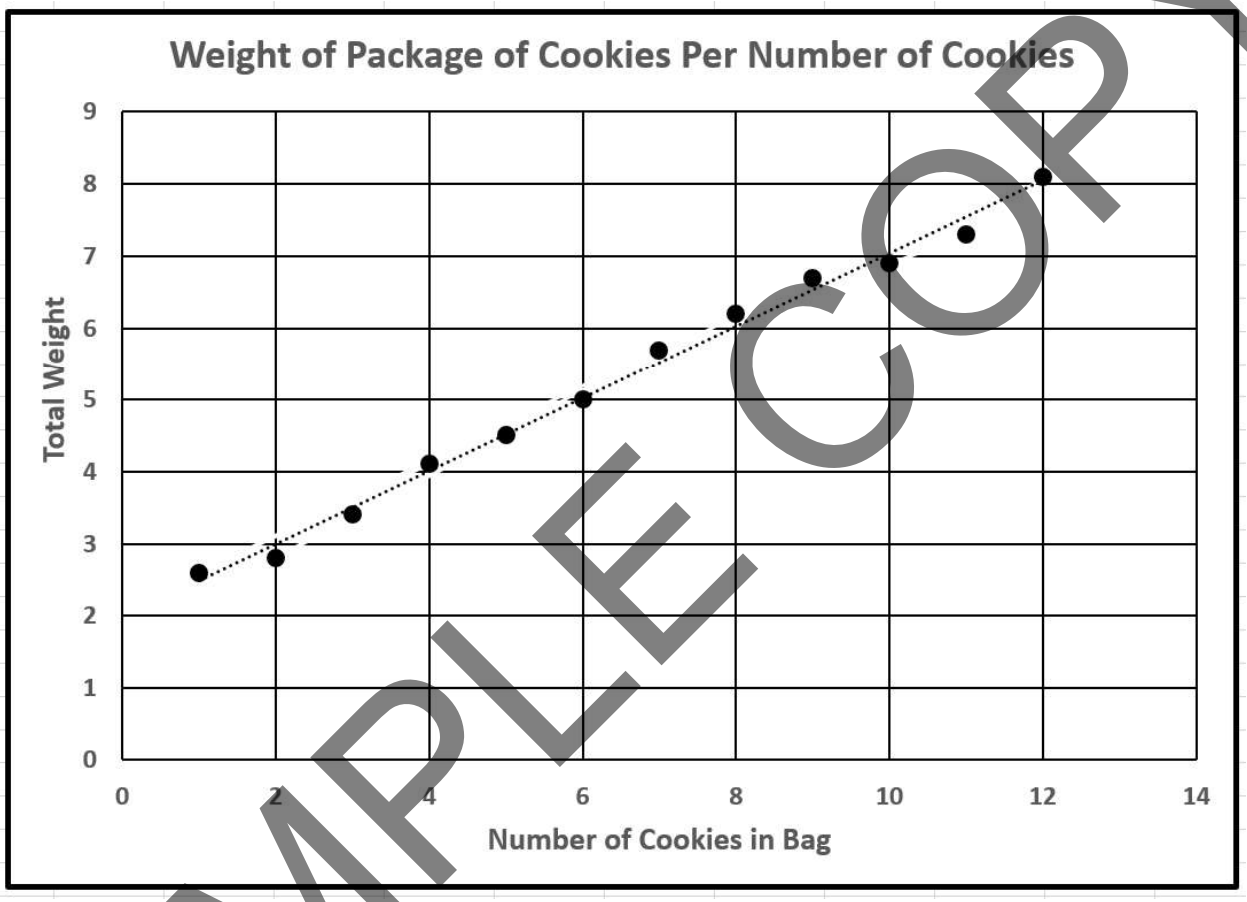
C $480

D $980.00

Spiral 106

1 (8.5D)

The graph shows the relationship between the number of cookies in a package and the total weight of the package in ounces.



If a child ate 2 cookies out of a bag originally weighing 8 ounces, estimate how many cookies the child has left.

F 4 cookies

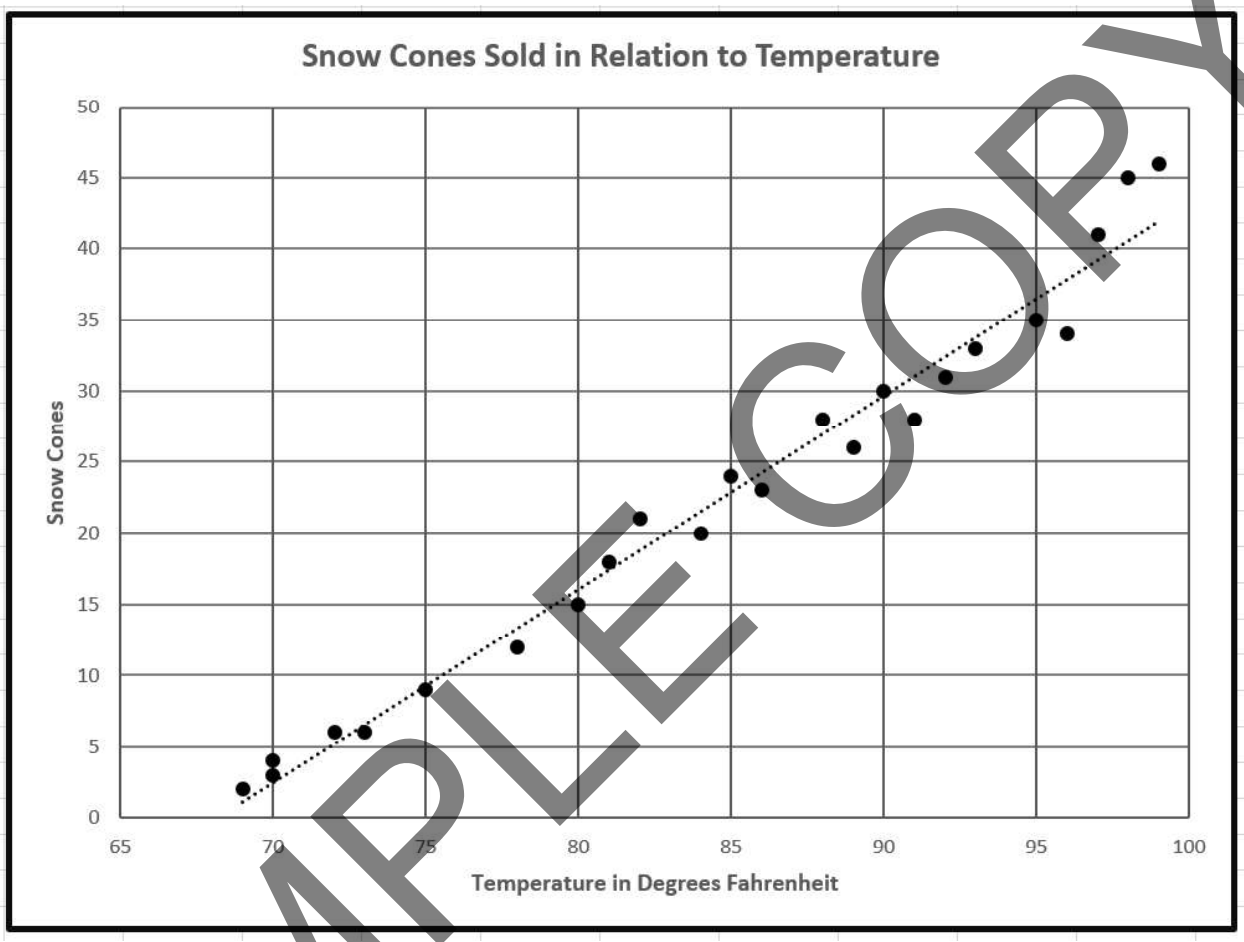
G 6 cookies

H 12 cookies

J 10 cookies

2 (8.5D)

The graph shows the number of snow cones sold in relation to the daily high temperature.



Estimate the number of snow cones sold on a day when the temperature reaches a high of 93 degrees.

A 31

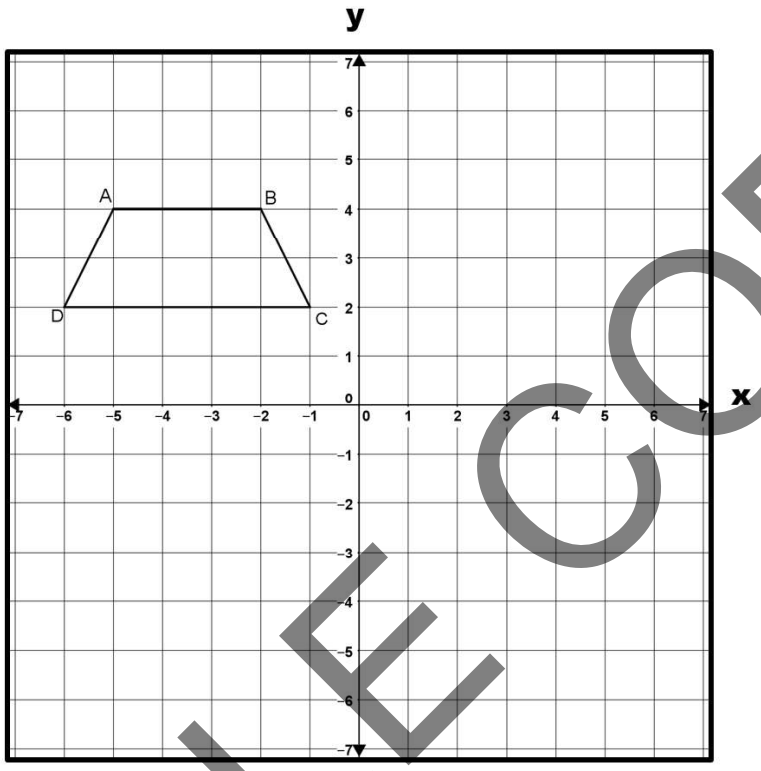
B 26

C 34

D 24

3 (8.10C)

The coordinate grid shows trapezoid $ABCD$.



Trapezoid $ABCD$ is reflected over the y-axis to create trapezoid $A'B'C'D'$. Which rule describes this transformation?

F $(x, y) \rightarrow (x, -y)$

G $(x, y) \rightarrow (-y, x)$

H $(x, y) \rightarrow (-x, y)$

J $(x, y) \rightarrow (y, -x)$

SpiralEd Solutions

Spiral 107

1 (8.12D)

Baker invested $200 in an account that pays 3.6% interest compounded annually. Baker will not make any additional deposits or withdrawals. How much will the account be worth at the end of 12 years??

A $305.74

B $327.50

C $286.40

D $386.40

2 (8.12D)

Jack invested $4,000 in an account that pays 2.8% interest compounded annually. Jack will not make any additional deposits or withdrawals. How much will the account be worth at the end of 7 years??

F $4,305.74

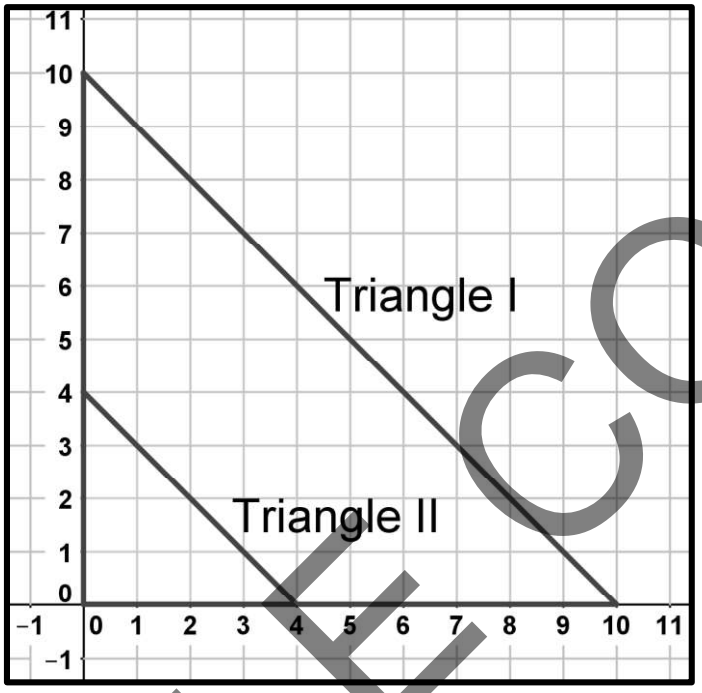
G $4,853.02

H $4,286.40

J $4,784.00

3 (8.3C)

Triangle I was dilated with the origin as the center of dilation to create Triangle II.



Which rule best represents the dilation applied to Triangle I to create Triangle II?

A $(x, y) \rightarrow (4x, 4y)$

B $(x, y) \rightarrow (\frac{2}{5}x, \frac{2}{5}y)$

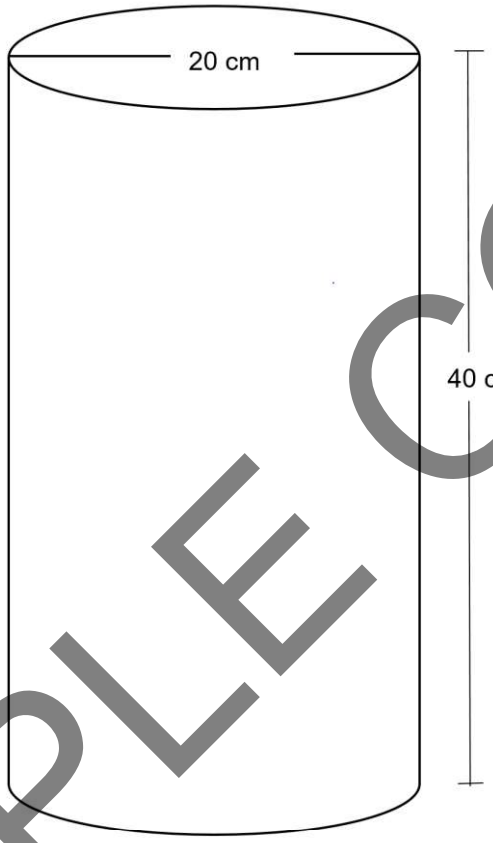
C $(x, y) \rightarrow (\frac{5}{2}x, \frac{5}{2}y)$

D $(x, y) \rightarrow (\frac{10}{4}x, \frac{10}{4}y)$

Spiral 108

1 (8.7B)

A cylinder and its dimensions are shown in the diagram.



What is the total surface area of the cylinder in square centimeters?

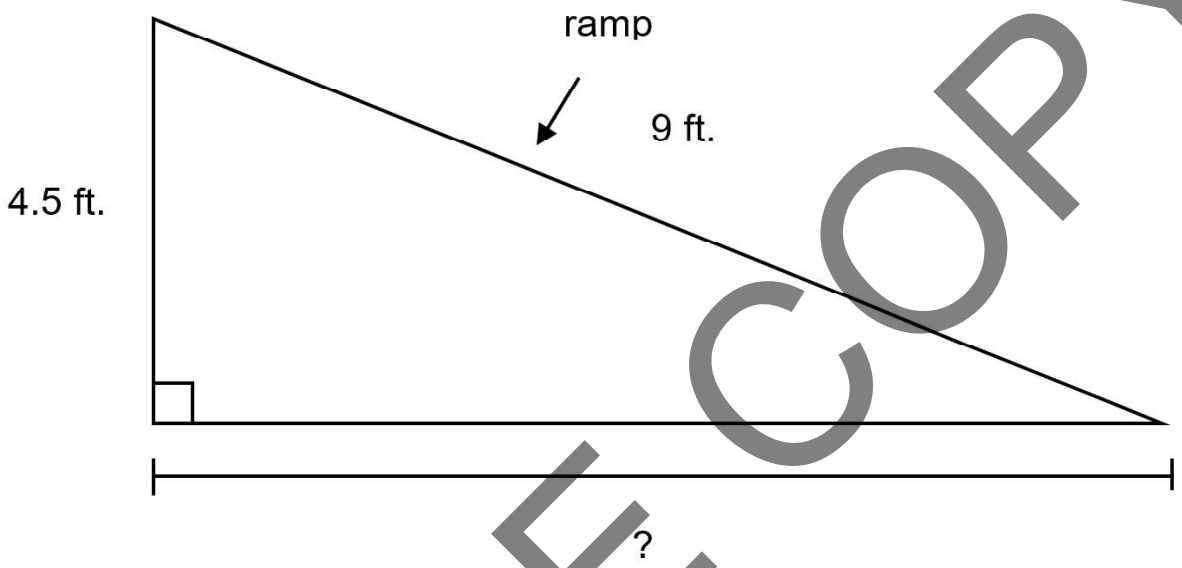
F 2512 cm^2

G 5652 cm^2

H 1600 cm^2

J 3140 cm^2

2 (8.7C A ramp is constructed to help move luggage onto a train.



Which measurement is closest to distance from the end of the ramp to the train in feet?

A 10 ft.

B 7.8 ft.

C 8.2 ft.

D 6.8 ft.

3 (8.8C)

To rent a midsize, four-door sedan Company A charges a rental fee of $125 dollars plus $72.50 per day. To rent the same car, Company B charges $57.20 per day plus a rental fee of $250. Calculate the minimum number of rental days, *d*, for the total cost of renting from Company B to be less than the total cost of renting from Company A.

F 7

G 6

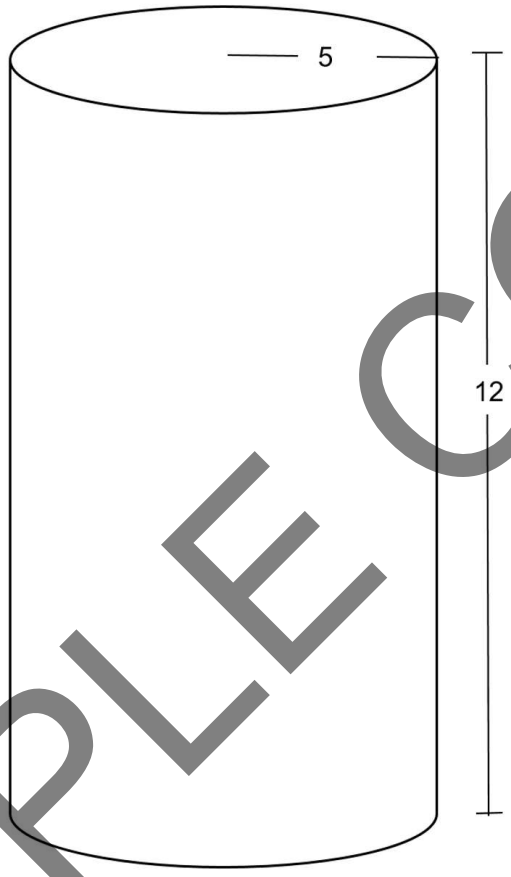
H 5

J 9

Spiral 109

1 (8.7B)

A cylinder and its dimensions are shown in the diagram.



What is the lateral surface area of the cylinder in square centimeters to the nearest tenth?

A 157 cm^2

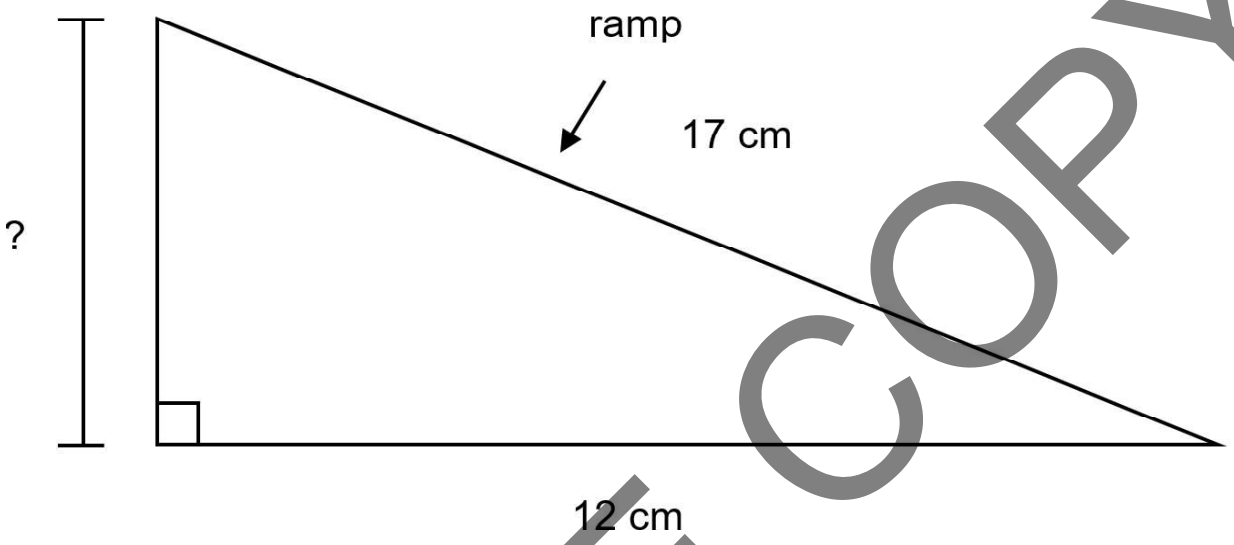
B 376.8 cm^2

C 533.8 cm^2

D 189 cm^2

2 (8.7C)

In science class, a ramp is constructed to test the distance a toy car will travel under different conditions.



Which measurement is closest to the maximum height of the ramp in centimeters?

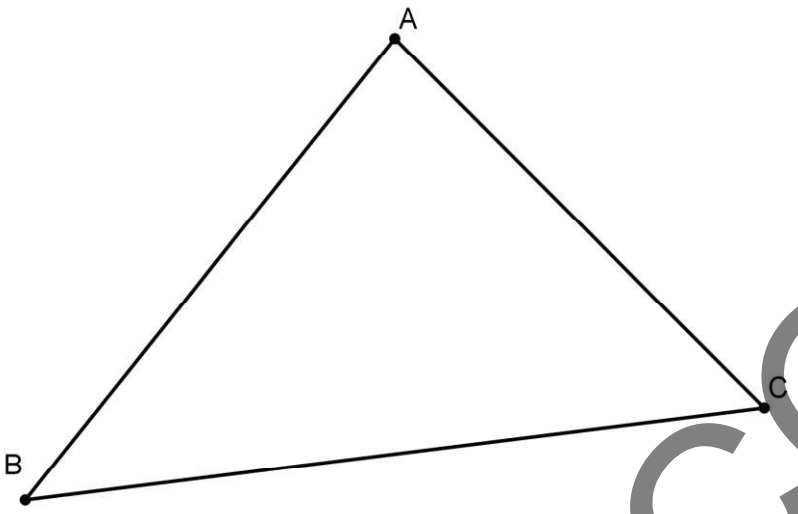
F 12 cm

G 20.8 cm

H 7.5 cm

J 9 cm

3 (8.4C)



In $\triangle ABC$, the measure of $\angle A$ is greater than the measure of $\angle B$. If $m\angle A = 3x - 10$ and $m\angle B = 2x$, what is the minimum whole number value of x so that the measure of $\angle A$ is greater than the measure of $\angle B$?

A 11

B 10

C 9

D 12

Spiral 110

1 (8.2D)

Which list shows the numbers below in order from greatest to least?

$$85.6\%,\ \frac{43}{50},\ 0.852,\ \frac{17}{20}$$

F $\frac{17}{20}$, 0.852, 85.6%, $\frac{43}{50}$

G $\frac{17}{20}$, 85.6%, 0.852, $\frac{43}{50}$

H $\frac{43}{50}$, 85.6%, $\frac{17}{20}$, 0.852

J $\frac{43}{50}$, 85.6%, 0.852, $\frac{17}{20}$

2 (8.2D)

A basketball coach keeps stats for his top players based on the number of baskets made, out of the number of attempts.

	Number Correct/Number Completed
Player 1	$0.\overline{7}$
Player 2	62.5%
Player 3	$\frac{19}{30}$
Player 4	$\frac{18}{28}$

Which list shows player stats in order from least to greatest?

A Player 4, Player 2, Player 3, Player 1

B Player 1, Player 3, Player 4, Player 2

C Player 2, Player 3, Player 4, Player 1

D Player 3, Player 4, Player 2, Player 1

3 (8.2D)

Which list shows the numbers below in order from greatest to least?

$$521\%,\ \sqrt{29}\ ,\ -5.24,\ -\frac{27}{5}$$

F $-\frac{27}{5}$, -5.24, 521%, $\sqrt{29}$

G $-\frac{27}{5}$, 521%, -5.24, $\sqrt{29}$

H $\sqrt{29}$, 521%, $-\frac{27}{5}$, -5.24

J $\sqrt{29}$, 521%, -5.24, $-\frac{27}{5}$

Spiral 111

1 (8.5G)

Which statement describes the table?

x	y
-3	2
-3	4
-3	6
-3	8
-3	10

A The table does not represent *y* as a function of *x*, because two of the *y*-values correspond to the same *x*-value.

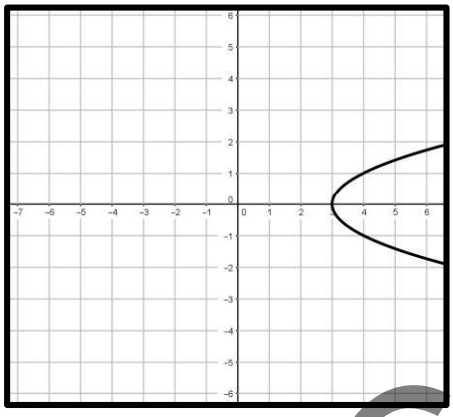
B The table does not represent *y* as a function of *x*, because two of the *x*-values correspond to the same *y*-value.

C The table represents *y* as a function of *x*, because each *x*-value corresponds to exactly one *y*-value.

D The table represents *y* as a function of *x*, because each *y*-value corresponds to exactly one *x*-value.

2 (8.5G)

Which statement describes the graph?



F The graph represents *y* as a function of *x*, because each *y*-value corresponds to exactly one *x*-value.

G The graph does not represent *y* as a function of *x*, because two of the *y*-values correspond to the same *x*-value.

H The graph represents *y* as a function of *x*, because each *x*-value corresponds to exactly one *y*-value.

J The graph does not represent *y* as a function of *x*, because two of the *x*-values correspond to the same *y*-value.

3 (8.5G)

Which statement describes the ordered pairs?

{(2,5), (-3,-5), (-2,5), (8,-5), (0,8)}

A The graph represents *y* as a function of *x*, because each *y*-value corresponds to exactly one *x*-value.

B The graph does not represent *y* as a function of *x*, because two of the *x*-values correspond to the same *y*-value.

C The graph represents *y* as a function of *x*, because each *x*-value corresponds to exactly one *y*-value.

D The graph does not represent *y* as a function of *x*, because horizontal lines are never functions.

SpiralEd Solutions

Spiral 112

1 (8.5I)

The cost of purchasing t-shirts requires a shipping fee of $25 and $12 per shirt. Which equation represents the total cost of the order (C) as a function of the number of shirts purchased (s)?

F $C = 25s + 12$

G $C = 12s + 25$

H $C = 25(s + 12)$

J $C = 12(s + 25)$

2 (8.5I)

Which function is represented by the set of ordered pairs?

{(-5,13), (-3,9), (0,3), (3,-3), (5,-7)}

A $y = 2x - 3$

B $y = -2x + 3$

C $y = -2x - 3$

D $y = 2x + 3$

3 (8.5I)

Which function is represented by the set of ordered pairs?

{(-5,7), (-3,3), (0,-3), (3,-9), (5,-13)}

F $y = 2x - 3$

G $y = -2x + 3$

H $y = -2x - 3$

J $y = 2x + 3$

SpiralEd Solutions

Spiral 113

1 (8.7A)

A sphere has a diameter of 4 centimeters. Which measurement is closest to the volume of the sphere in cubic centimeters?

A 67 cm^3

B 267.95 cm^3

C 33.49 cm^3

D 16.75 cm^3

2 (8.7A)

A cylinder has a diameter of 8.6 centimeters and a height of 9 centimeters. Which measurement is closest to the volume of the cylinder in cubic centimeters?

F 2090.11 cm^3

G 2187.32 cm^3

H 232.23 cm^3

J 522.53 cm^3

3 (8.7A)

A sphere has a diameter of 8 centimeters. Which measurement is closest to the volume of the sphere in cubic centimeters?

A 67 cm^3

B 200.96 cm^3

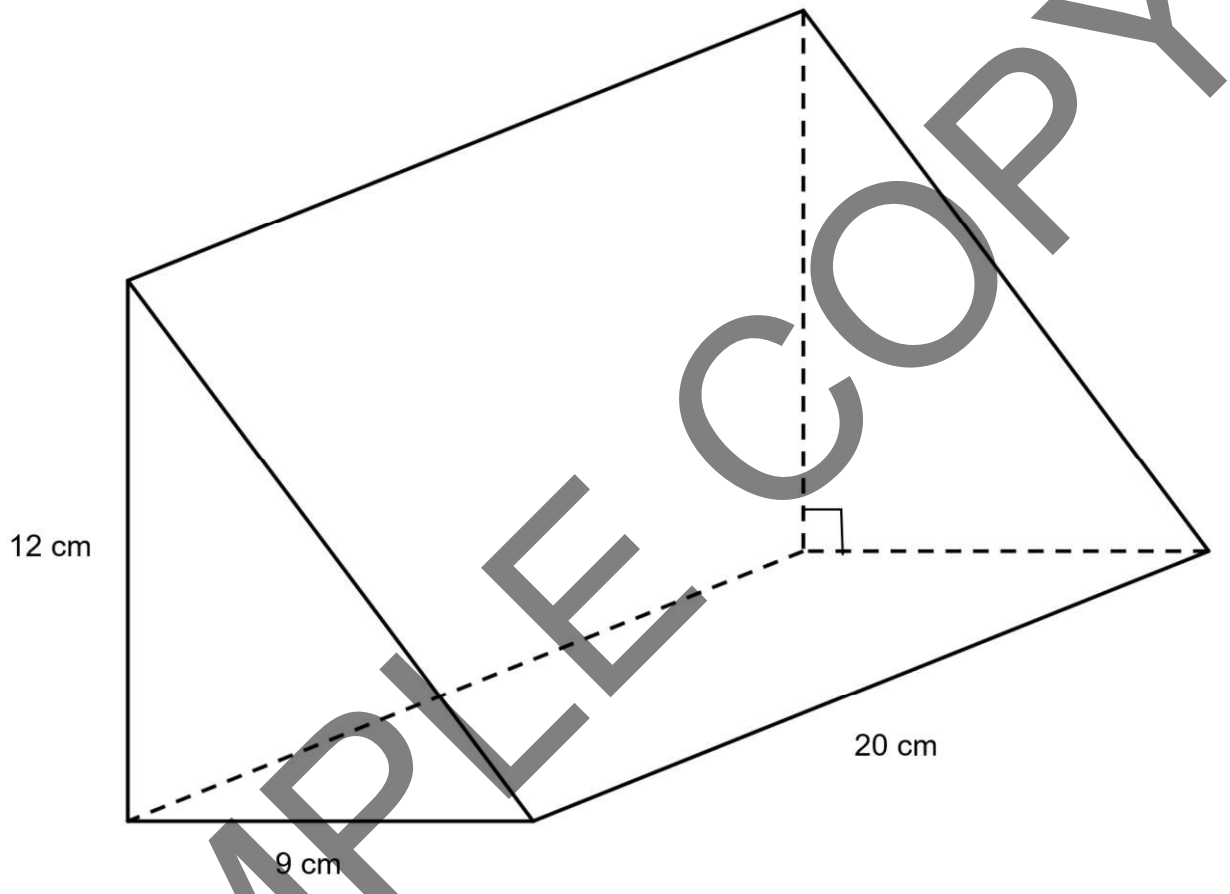
C 803.84 cm^3

D 267.95 cm^3

Spiral 114

1 (8.7B)

A triangular prism and its dimensions are shown in the diagram.



What is the lateral surface area in square centimeters?

F 420 cm^2

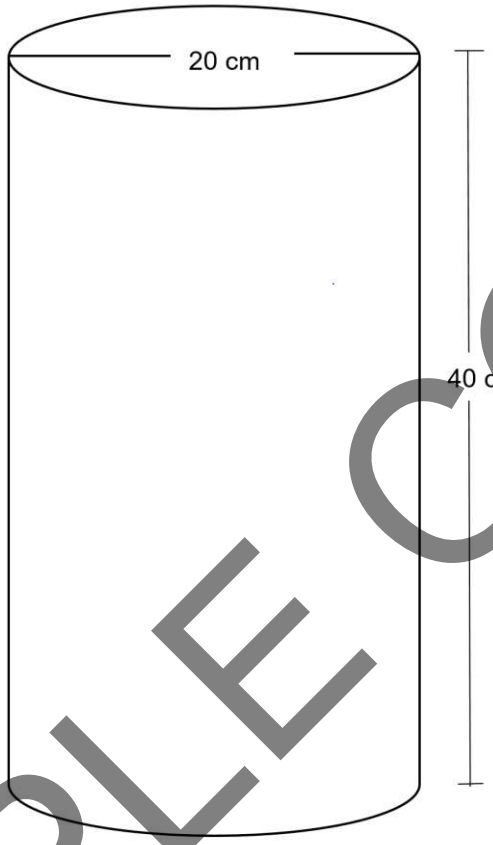
G 720 cm^2

H 936 cm^2

J 2160 cm^2

2 (8.7B)

A cylinder and its dimensions are shown in the diagram.



Which equation can be used to determine the lateral surface area of the cylinder?

A $S = 2\pi \cdot 10 \cdot 40$

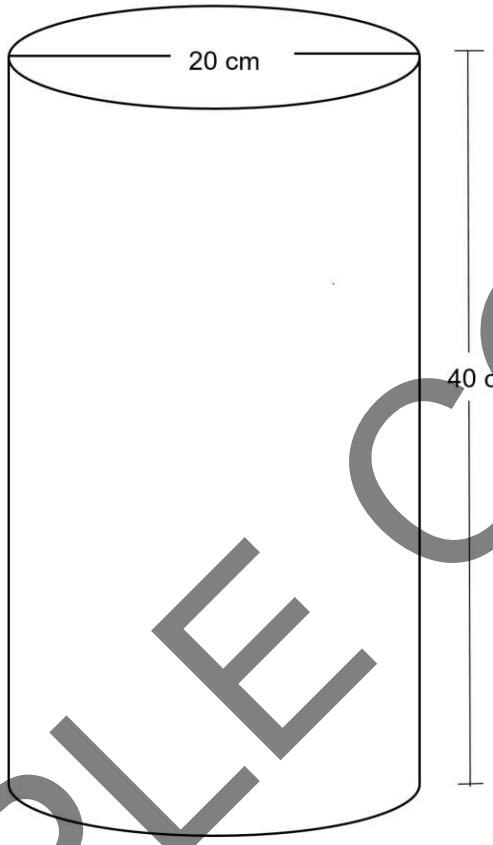
B $S = 2\pi \cdot 20 \cdot 40$

C $S = 2 \cdot 20 \cdot 40$

D $S = (2\pi \cdot 10 \cdot 40) + 2\pi 10^2$

3 (8.7B)

A cylinder and its dimensions are shown in the diagram.



What is the lateral surface area of the cylinder in square centimeters?

F 2512 cm^2

G 5652 cm^2

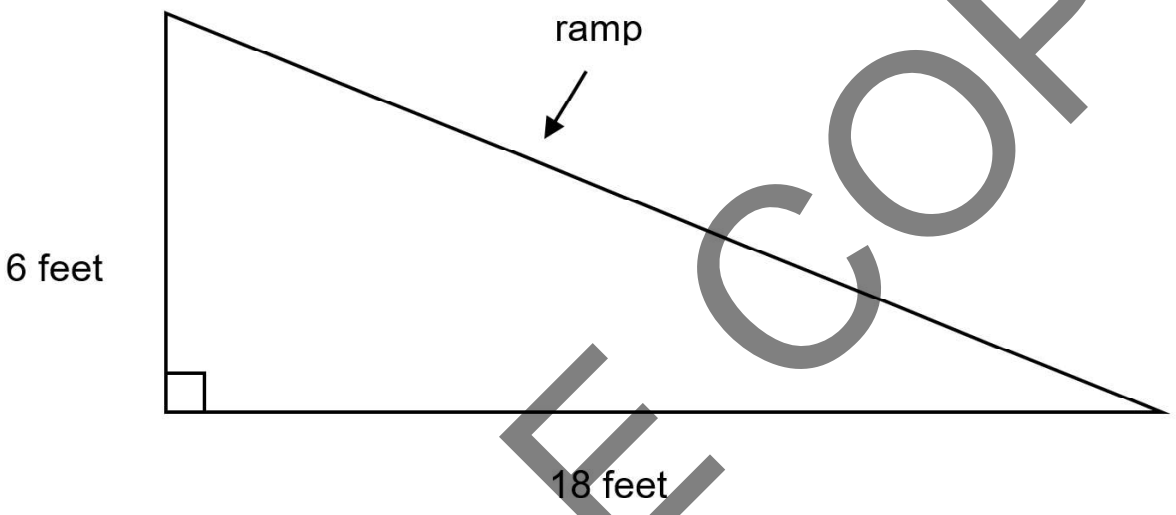
H 1600 cm^2

J 3140 cm^2

Spiral 115

1 (8.7C)

A ramp is constructed to help move luggage onto a train.



Which measurement is closest to the length of the ramp in feet?

A 17 ft.

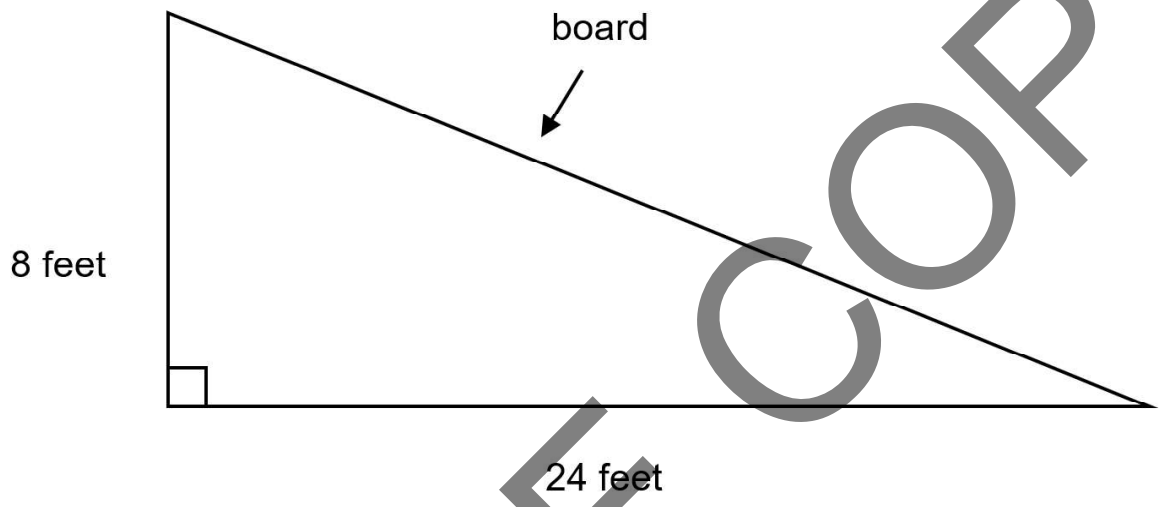
B 19 ft.

C 20.2 ft.

D 18.2 ft.

2 (8.7C)

A board is used to frame the roofline of a new building.



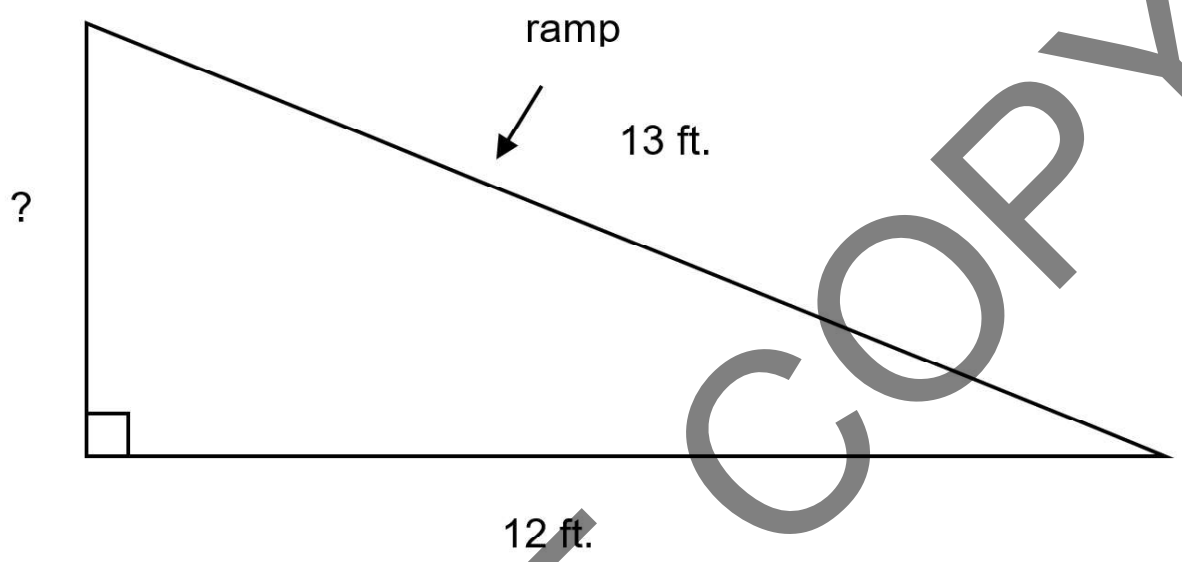
Which measurement is closest to the length of the board in feet?

F 25.3 ft. **G** 28 ft.

H 26.2 ft. **J** 22.6 ft.

3 (8.7C)

A ramp is constructed to help move materials onto a loading dock.



Which measurement is closest to the height of the loading dock in feet?

A 5 ft.

B 8 ft.

C 9 ft.

D 4.7 ft.

SpiralEd Solutions

Spiral 116

1 (8.8C)

If $-7x - 16 > -9x$, what values of x makes the inequality true?

F $x < -8$ **G** $x > 8$

H $x < 8$ **J** $x > -8$

2 (8.8C)

Rental Company A charges $50 per hour plus a delivery fee of $400 to rent a small bulldozer. Rental Company B charges $100 per hour with free delivery to rent the same equipment. Find the number of hours, h, for a rental, so that the total charge at Rental Company A is equal to the total charge at Rental Company B?

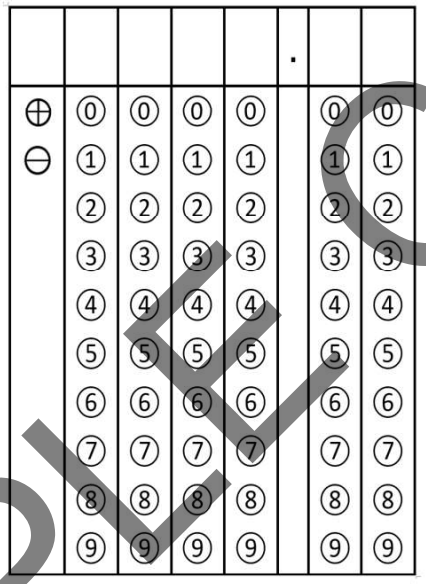
A 12 **B** 18

C 10 **D** 8

3 (8.8C)

Job A pays 10 dollars per hour with a $400 signing bonus, while Job B pays 12 dollars per hour with a $300 signing bonus. Determine the number of hours, *h*, an employee will have to work to earn an equal amount of money for Job A and Job B.

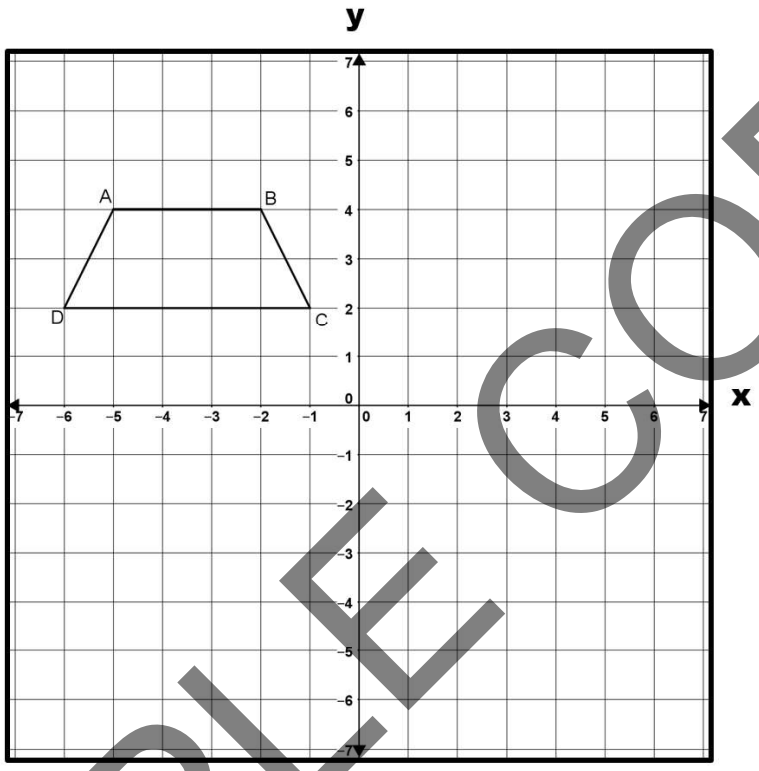
Record your answer and fill in the bubbles. Be sure to use the correct place value.



Spiral 117

1 (8.10C)

The coordinate grid shows trapezoid $ABCD$.



Trapezoid $ABCD$ is reflected over the x-axis to create trapezoid $A'B'C'D'$. Which rule describes this transformation?

A $(x,y) \rightarrow (x,-y)$

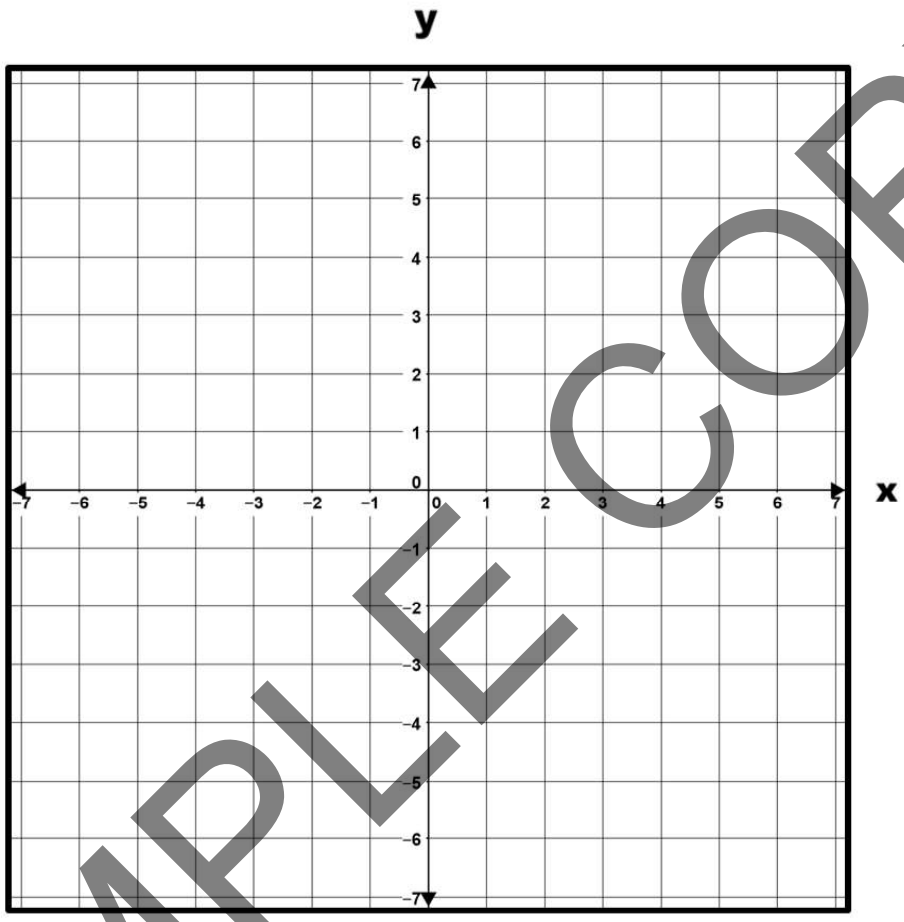
B $(x,y) \rightarrow (-y,x)$

C $(x,y) \rightarrow (-x,y)$

D $(x,y) \rightarrow (y,-x)$

2 (8.10C)

The coordinates of the vertices of a quadrilateral are *A* (3,4), *B* (5,4), *C* (5,1), *D* (3,1).



Quadrilateral *ABCD* is reflected over the y-axis to create quadrilateral $A'B'C'D'$. Which rule describes this transformation?

F $(x,y) \rightarrow (x,-y)$

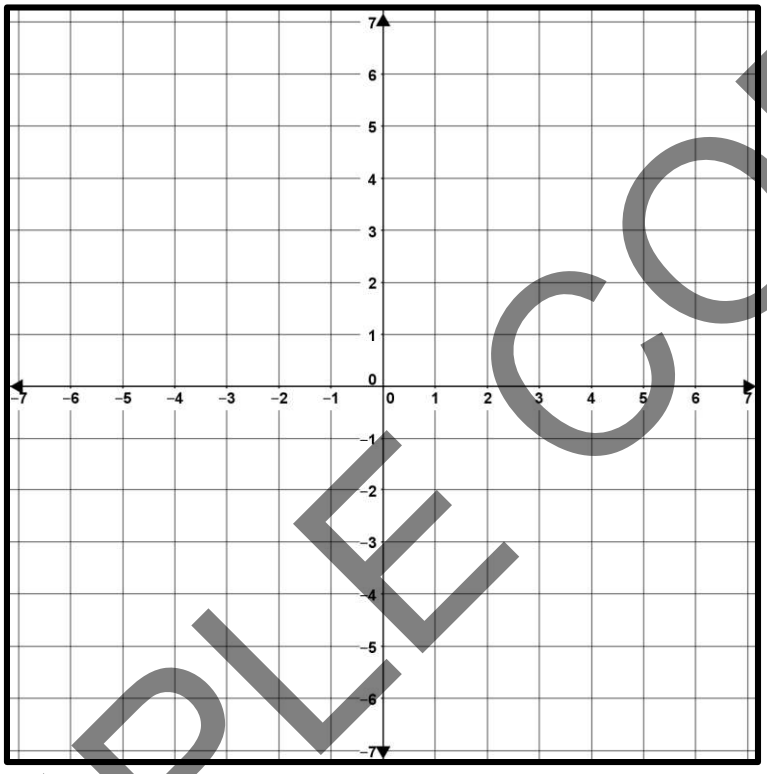
G $(x,y) \rightarrow (-y,x)$

H $(x,y) \rightarrow (-x,y)$

J $(x,y) \rightarrow (y,-x)$

3 (8.10C)

The coordinates of the vertices of a quadrilateral are A (3,4), B (5,4), C (5,1), D (3,1).



Quadrilateral $ABCD$ is rotated 90^0 clockwise about the origin to create quadrilateral $A'B'C'D'$. Which rule describes this transformation?

A $(x,y) \rightarrow (x,-y)$

B $(x,y) \rightarrow (-y,x)$

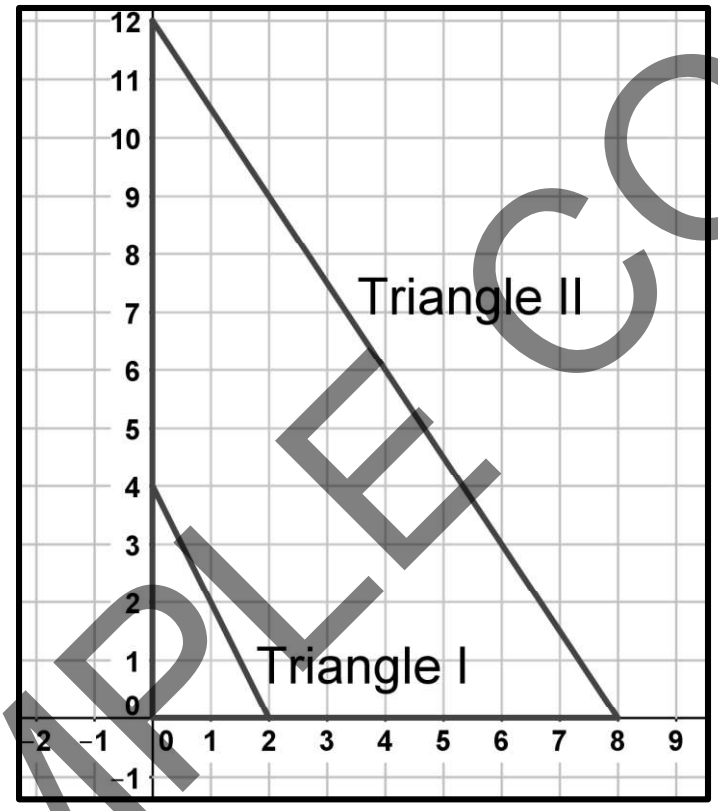
C $(x,y) \rightarrow (-x,y)$

D $(x,y) \rightarrow (y,-x)$

Spiral 118

1 (8.3C)

Triangle I was dilated with the origin as the center of dilation to create Triangle II.



Which rule best represents the dilation applied to Triangle I to create Triangle II?

F $(x,y) \rightarrow (2x,2y)$

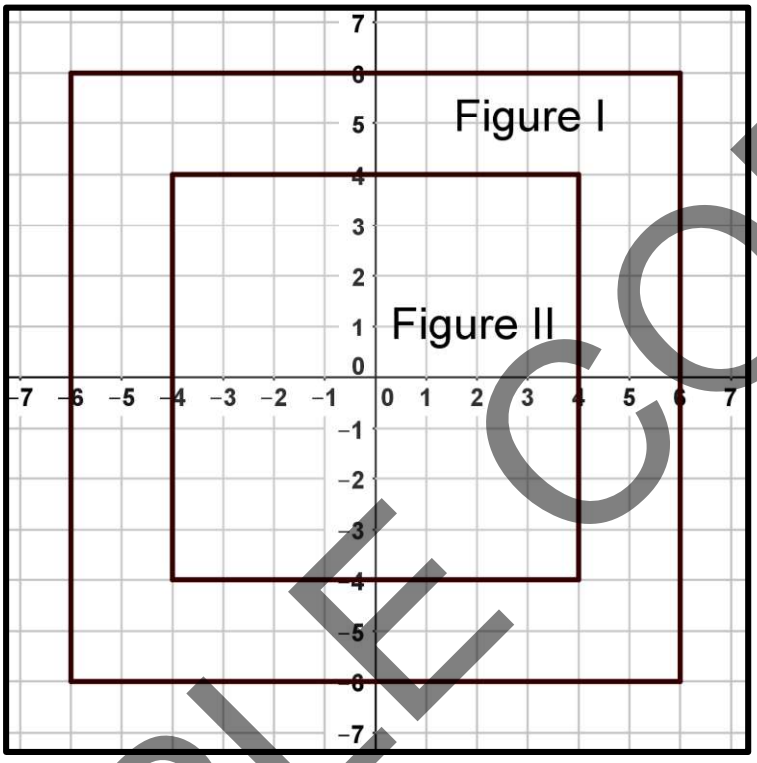
G $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

H $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

J $(x,y) \rightarrow (4x,4y)$

2 (8.3C)

Figure I was dilated with the origin as the center of dilation to create Figure II.



Which rule best represents the dilation applied to Figure I to create Figure II?

A $(x, y) \rightarrow (\frac{2}{3}x, \frac{2}{3}y)$

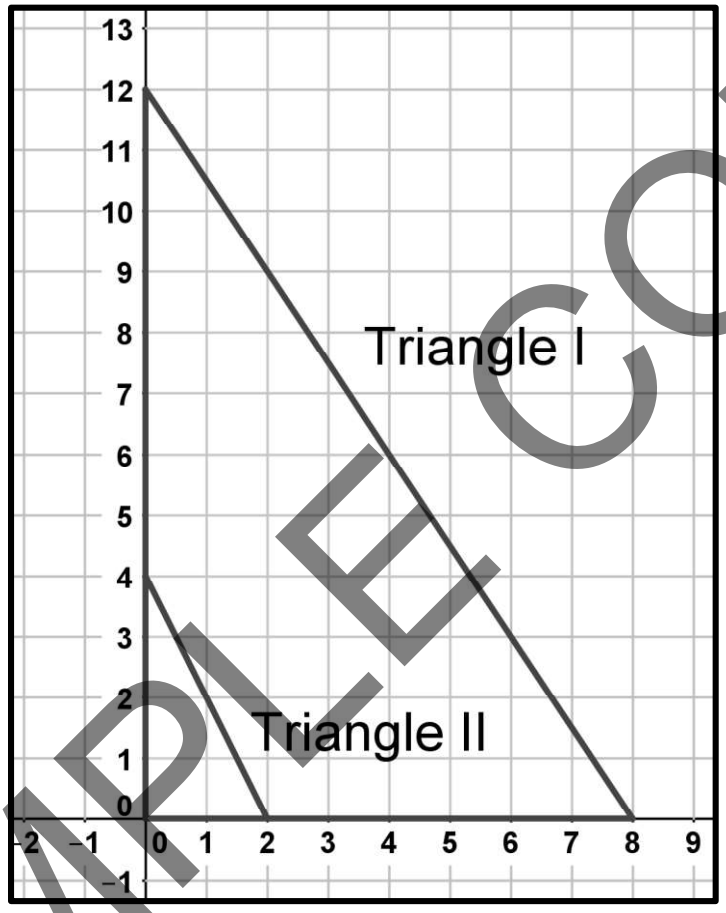
B $(x, y) \rightarrow (\frac{1}{4}x, \frac{1}{4}y)$

C $(x, y) \rightarrow (4x, 4y)$

D $(x, y) \rightarrow (\frac{3}{2}x, \frac{3}{2}y)$

3 (8.3C)

Triangle I was dilated with the origin as the center of dilation to create Triangle II.



Which rule best represents the dilation applied to Triangle I to create Triangle II?

F $(x,y) \rightarrow (2x,2y)$

G $(x,y) \rightarrow (\frac{1}{4}x,\frac{1}{4}y)$

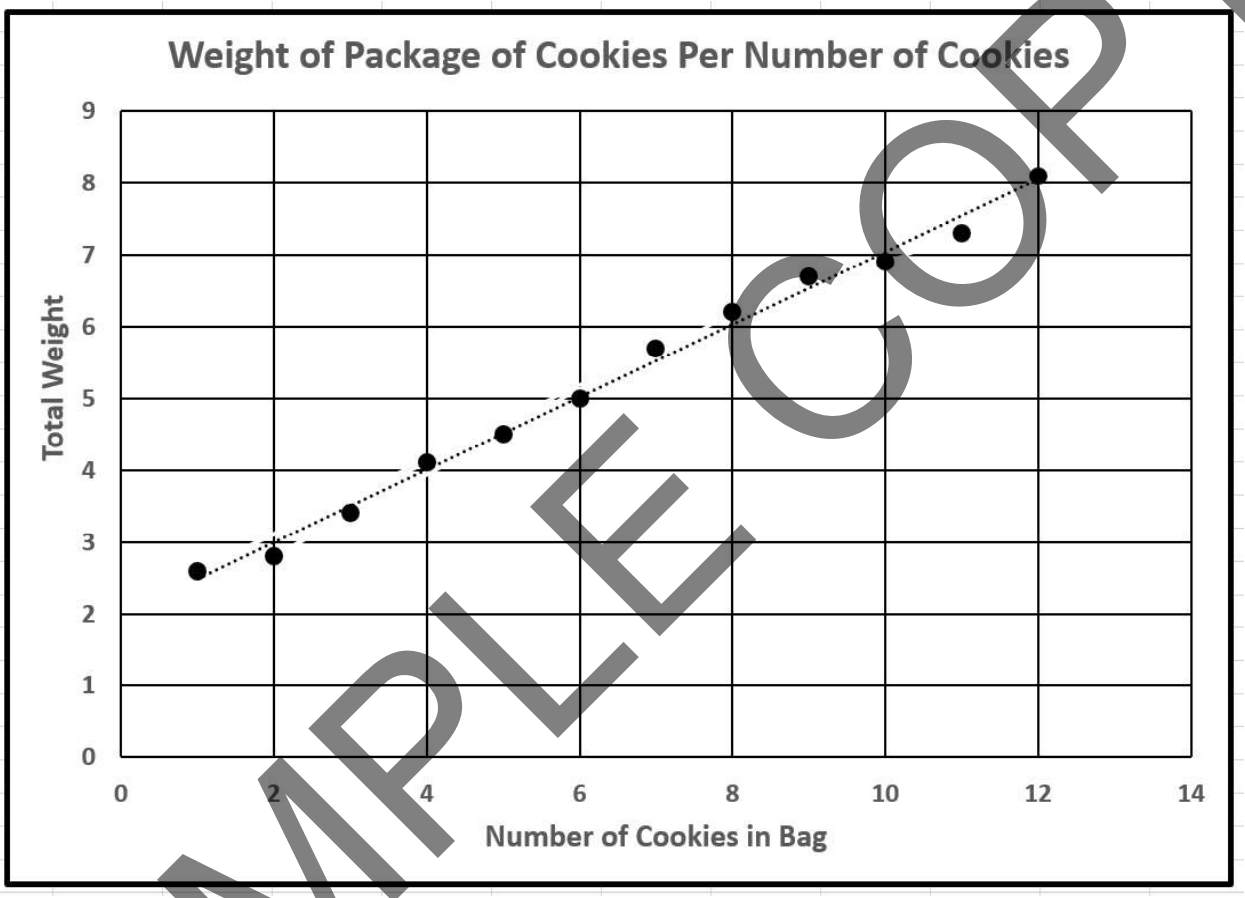
H $(x,y) \rightarrow (\frac{1}{2}x,\frac{1}{2}y)$

J $(x,y) \rightarrow (4x,4y)$

Spiral 119

1 (8.5D)

The graph shows the relationship between the number of cookies in a package and the total weight of the package in ounces.



Estimate the number of cookies in a bag weighing 6 ounces

A 5 cookies

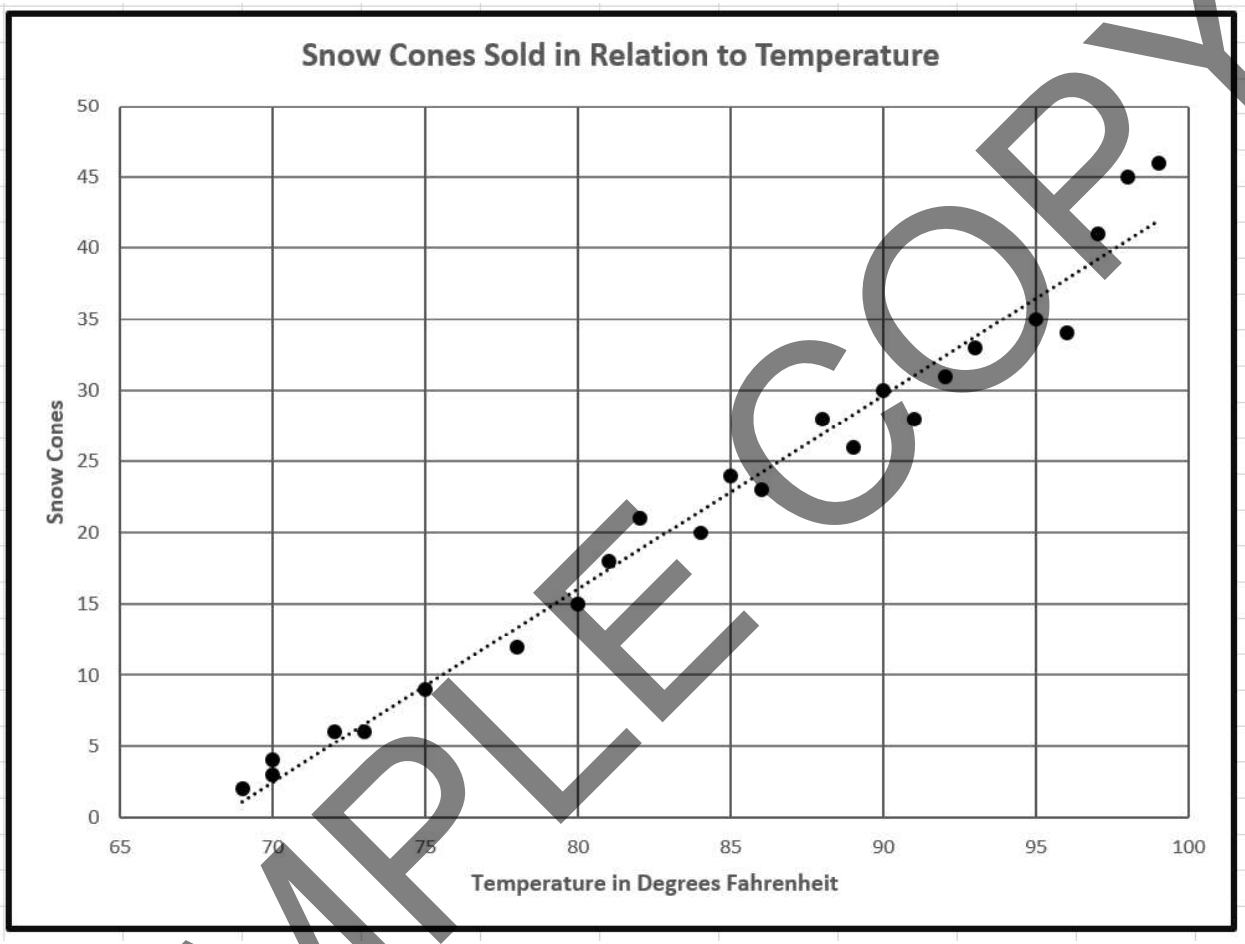
B 6 cookies

C 8 cookies

D 10 cookies

2 (8.5D)

The graph shows the number of snow cones sold in relation to the daily high temperature.



Estimate the temperature on a day when sales reached 35 snow cones.

F 96^0 F

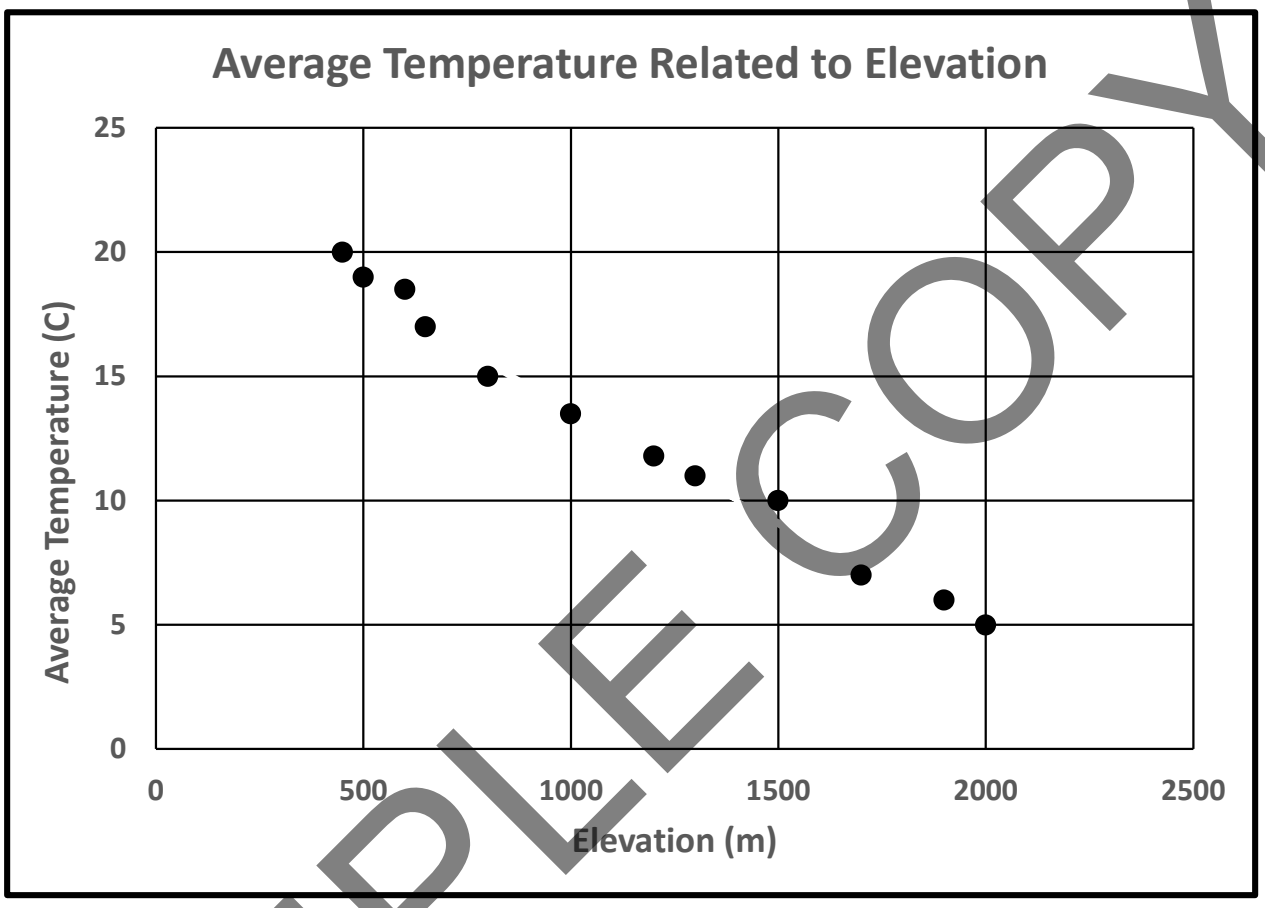
G 92.5^0 F

H 96.5

J 94^0 F

3 (8.5D)

The graph shows the average daily temperature in relation to the altitude.



Predict the average daily temperature for an elevation of 1200 m.

A 18.1^0 C

B 10^0 C

C 11.8^0 C

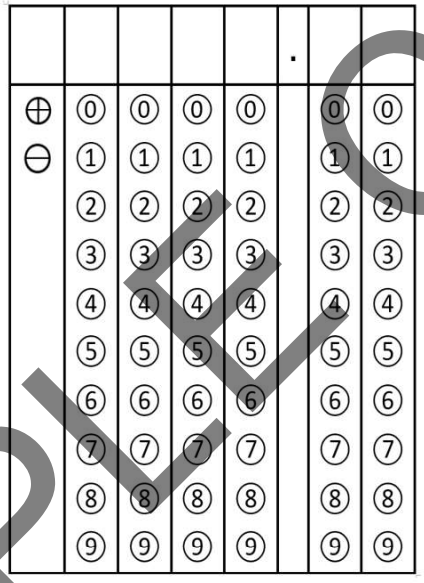
D 15^0 C

Spiral 120

1 (8.12D)

Kyle invested $3,000 in an account that pays 2.4% annual simple interest. Kyle will not make any additional deposits or withdrawals. How much interest will Kyle earn on his investment at the end of 7 years?

Record your answer and fill in the bubbles. Be sure to use the correct place value.



2 (8.12D)

Roger invested $4,000 in an account that pays 2.2% annual simple interest. Roger will not make any additional deposits or withdrawals. How much will Roger's account be worth after 6 years?

A $528.00

B $4,528.00

C $3,856.00

D $856.00

3 (8.12D)

Kenneth invested $2,500 in an account that pays 3.2% annual simple interest. Kenneth will not make any additional deposits or withdrawals. How much interest will Kenneth earn on his investment at the end of 6 years?

F $2,980.00

G $3,504.00

H $480

J $980.00