



Grade 8

Spirals

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## Tracking Document

***SpiralEd Solutions***

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8.2(A)	classify whole numbers, integers, and rational numbers using a visual representation such as a Venn diagram to extend previous knowledge of sets and subsets using a visual representation to describe relationships between sets of real numbers describe relationships between sets of numbers								
		S1Q1	S1Q2	S8Q1	S41Q1	S61Q1			
		S81Q1							
8.2(B)	approximate the value of an irrational number, including $\pi$ and square roots of numbers less than 225, and locate that rational number approximation on a number line								
		S1Q3	S2Q1	S9Q1	S47Q2	S67Q2			
		S81Q2							
8.2(C)	convert between standard decimal notation and scientific notation								
		S2Q2	S2Q3	S10Q1	S51Q3	S71Q3			
		S81Q3							
8.2(D)	order a set of real numbers arising from mathematical and real-world contexts								
		S3Q1	S3Q2	S3Q3	S6Q3	S7Q1			
		S11Q1	S36Q2	S45Q1	S45Q2	S59Q3			
		S91Q1	S94Q3	S110Q1	S110Q2	S110Q3			
8.3(A)	generalize that the ratio of corresponding sides of similar shapes are proportional, including a shape and its dilation								
		S48Q2	S48Q3	S61Q3	S82Q3	S87Q1			
		S90Q2							

8.3(B)	compare and contrast the attributes of a shape and its dilation(s) on a coordinate plane								
		S49Q1		S49Q3		S62Q3		S83Q1	S89Q1
		S90Q3							
8.3(C)	use an algebraic representation to explain the effect of a given positive rational scale factor applied to two-dimensional figures on a coordinate plane with the origin as the center of dilation								
		S50Q2		S50Q3		S51Q1		S58Q3	S59Q1
		S59Q2		S91Q2		S99Q2		S105Q1	S105Q2
		S107Q3		S118Q1		S118Q2		S118Q3	
8.4(A)	use similar right triangles to develop an understanding that slope, $m$ , given as the rate comparing the change in $y$ -values to the change in $x$ -values, $(y_2 - y_1) / (x_2 - x_1)$ , is the same for any two points $(x_1, y_1)$ and $(x_2, y_2)$ on the same line								
		S4Q1		S4Q2		S7Q2		S8Q2	S54Q1
		S74Q1		S82Q2					
8.4(B)	graph proportional relationships, interpreting the unit rate as the slope of the line that models the relationship								
		S4Q3		S5Q1		S5Q2		S7Q3	S1Q3
		S10Q3		S11Q3		S36Q3		S37Q2	S45Q3
		S46Q2		S60Q1		S92Q1		S94Q3	

8.4(C)	use data from a table or graph to determine the rate of change or slope and $y$ -intercept in mathematical and real-world problems								
		S5Q3		S6Q1		S8Q3		S9Q2	S10Q2
		12Q2		S12Q1		S12Q3		S37Q3	S38Q1
		S46Q3		S47Q1		S60Q2		S96Q3	S99Q3
8.5(A)	represent linear proportional situations with tables, graphs, and equations in the form of $y = kx$								
		S13Q1		S22Q1		S57Q3		S63Q1	S77Q2
		S83Q2							
8.5(B)	present linear non-proportional situations with tables, graphs, and equations in the form of $y = mx + b$ , where $b \neq 0$								
		S13Q2		S13Q3		S23Q1		S60Q3	S80Q3
		S83Q3							
8.5(C)	contrast bivariate sets of data that suggest a linear relationship with bivariate sets of data that do not suggest a linear relationship from a graphical representation								
		S14Q1		S14Q2		S24Q1		S62Q2	S64Q2
		S84Q1							
8.5(D)	use a trend line that approximates the linear relationship between bivariate sets of data to make predictions								
		S65Q1		S65Q2		S65Q3		S92Q2	S100Q3
		S101Q3		D103Q2		S103Q3		S106Q1	S106Q2
		S119Q1		S119Q2		S119Q3			

8.5(E)	solve problems involving direct variation							
		S14Q3	S15Q2	S25Q1	S44Q3	S64Q3		
		S85Q1						
6.5(F)	distinguish between proportional and non-proportional situations using tables, graphs, and equations in the form $y = kx$ or $y = mx + b$ , where $b \neq 0$							
		S16Q2	S17Q1	S26Q1	S46Q1	S66Q1		
		S86Q1						
8.5(G)	identify functions using sets of ordered pairs, tables, mappings, and graphs							
		S15Q1	S15Q3	S16Q1	S16Q3	S18Q1		
		S19Q1	S19Q3	S20Q3	S38Q2	S38Q3		
		S47Q3	S48Q1	S100Q1	S111Q1	S111Q2		
		S111Q3						
8.5(H)	identify examples of proportional and non-proportional functions that arise from mathematical and real-world problems							
		S17Q2	S17Q3	S27Q1	S49Q2	S63Q2		
		S69Q2	S88Q1					
8.5(I)	write an equation in the form $y = mx + b$ to model a linear relationship between two quantities using verbal, numerical, tabular, and graphical representations							
		S18Q2	S18Q3	S19Q2	S20Q1	S20Q2		
		S21Q1	S39Q1	S39Q2	S55Q1	S55Q2		
		S62Q1	S97Q2	S99Q1	S112Q1	112Q2		
		S112Q3						

8.6(A)	describe the volume formula $V = Bh$ of a cylinder in terms of its base area and its height								
		S22Q2	S22Q3	S51Q2	S64Q1	S71Q2			
		S93Q1							
8.6(B)	model the relationship between the volume of a cylinder and a cone having both congruent bases and heights and connect that relationship to the formulas (not tested)								
8.6(C)	use models and diagrams to explain the Pythagorean theorem								
		S23Q2	S23Q3	S52Q3	S72Q3	S94Q1			
8.7(A)	solve problems involving the volume of cylinders, cones, and spheres								
		S24Q2	S24Q3	S25Q2	S29Q3	S30Q2			
		S31Q3	S39Q3	S40Q3	S52Q1	S52Q2			
		S95Q1	S97Q3	S103Q1	S113Q1	S113Q2			
		S113Q3							
8.7(B)	use previous knowledge of surface area to make connections to the formulas for lateral and total surface area and determine solutions for problems involving rectangular prisms, triangular prisms, and cylinders								
		S25Q3	S26Q2	S26Q3	S32Q2	S33Q2			
		S34Q2	S40Q1	S53Q2	S53Q3	S56Q2			
		S94Q2	S97Q3	S108Q1	S109Q1	S114Q1			
		S114Q2	S114Q3						



8.7(C)	use the Pythagorean Theorem and its converse to solve problems								
		S27Q2		S27Q3		S28Q1		S28Q3	S35Q1
		S36Q1		S37Q1		S40Q2		S54Q3	S96Q2
		S108Q2		S109Q2		S115Q1		S115Q2	S115Q3
8.7(D)	determine the distance between two points on a coordinate plane using the Pythagorean Theorem								
		S28Q2		S29Q1		S53Q1		S66Q2	S73Q1
		S85Q3							
8.8(A)	write one-variable equations or inequalities with variables on both sides that represent problems using rational number coefficients and constants								
		S29Q2		S30Q1		S54Q2		S66Q3	S74Q2
		S86Q2							
8.8(B)	write a corresponding real-world problem when given a one-variable equation or inequality with variables on both sides of the equal sign using rational number coefficients and constants								
		S30Q3		S31Q1		S55Q3		S75Q3	S78Q3
		S86Q3							
8.8(C)	model and solve one-variable equations with variables on both sides of the equal sign that represent mathematical and real-world problems using rational number coefficients and constants								
		S31Q2		S32Q1		S32Q3		S34Q1	S34Q3

		S35Q2		S35Q3		S56Q3		S57Q1		S95Q2
		S108Q3		S109Q3		S116Q1		S116Q2		S116Q3
8.8(D)	use informal arguments to establish facts about the angle sum and exterior angle of triangles, the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles									
		S33Q1		S33Q3		S56Q1		S76Q1		S78Q2
		S87Q3								
8.9(A)	identify and verify the values of x and y that simultaneously satisfy two linear equations in the form $y = mx + b$ from the intersections of the graphed equations									
		S21Q2		S21Q3		S50Q1		S63Q3		S70Q1
		S90Q1								
8.10(A)	generalize the properties of orientation and congruence of rotations, reflections, translations, and dilations of two-dimensional shapes on a coordinate plane									
		S41Q2		S41Q3		S79Q1		S88Q3		
8.10(B)	differentiate between transformations that preserve congruence and those that do not									
		S42Q1		S42Q2		S79Q2		S80Q1		S80Q2
		S88Q2								



8.10(C)	explain the effect of translations, reflections over the x- or y-axis, and rotations limited to $90^\circ$ , $180^\circ$ , $270^\circ$ , and $360^\circ$ as applied to two-dimensional shapes on a coordinate plane using an algebraic representation								
		S42Q3	S43Q1	S43Q2	S57Q2	S58Q1			
		S58Q2	S89Q2	S100Q2	S104Q2	S104Q3			
		S106Q3	S117Q1	S117Q2	S117Q3				
8.10(D)	model the effect on linear and area measurements of dilated two-dimensional shapes								
		S43Q3	S44Q1	S44Q2	S61Q2	S82Q1			
		S89Q3							
8.11(A)	construct a scatterplot and describe the observed data to address questions of association such as linear, non-linear, and no association between bivariate data								
		S67Q1	S67Q3	S68Q3	S73Q3	S91Q3			
		S102Q1							
8.11(B)	determine the mean absolute deviation and use this quantity as a measure of the average distance data are from the mean using a data set of no more than 10 data points								
		S68Q1	S68Q2	S84Q2	S84Q3	S85Q2			
		S97Q1							

8.11(C)	simulate generating random samples of the same size from a population with known characteristics to develop the notion of a random sample being representative of the population from which it was selected (not tested)								
8.12(A)	solve real-world problems comparing how interest rate and loan length affect the cost of credit								
		S69Q1	S69Q3	S73Q2	S77Q3	S87Q2			
		S92Q3	S102Q2						
8.12(B)	calculate the total cost of repaying a loan, including credit cards and easy access loans, under various rates of interest and over different periods using an online calculator (not tested)								
8.12(C)	explain how small amounts of money invested regularly, including money saved for college and retirement, grow over time								
		S70Q2	S70Q3	S71Q1	S76Q3	S96Q1			
		S102Q3							
8.12(D)	calculate and compare simple interest and compound interest earnings								
		S72Q1	S72Q2	S77Q1	S93Q2	S97Q1			
		S97Q2	S101Q1	S101Q2	S104Q1	S105Q3			
		S107Q1	S107Q2	S120Q1	S120Q2	S120Q3			
8.12(E)	identify and explain the advantages and disadvantages of different payment methods (not tested)								

8.12(F)	analyze situations to determine if they represent financially responsible decisions and identify the benefits of financial responsibility and the costs of financial irresponsibility (not tested)								
8.12(G)	estimate the cost of a two-year and four-year college education, including family contribution, and devise a periodic savings plan for accumulating the money needed to contribute to the total cost of attendance for at least the first year of college								
		S74Q3		S75Q1		S75Q2		S76Q2	S78Q1
		S79Q3		S93Q3					