AC9 CRCT Weekly Review

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- 1. A picture that is 820 mm by 410 mm is to be reduced so that its larger dimension becomes 600 mm. What will its smaller dimension be?
 - A 560 mm 190 mm С 1200 mm 300 mm В D
- 2. A common scale for do-it-yourself airplane models is 1:48. The F-117A Stealth Fighter is 63 feet, 9 inches long. To the nearest inch, how long would a model of this plane be?

F	9 in.	Η	13 in.
G	12 in.	J	16 in.

- 3. An advertisement on a billboard measures 22 ft long and 8 ft high. If the ad is transferred to the side of a bus and is 30 in. long, how tall is the new ad, to the nearest inch?
 - A 9 in. C 11 in. B 10 in. D 12 in.
 - 4. A figure has vertices (-13, 13), (26, 52), (39, 39). What would be the new coordinates of the vertices to the nearest tenth if the image were reduced by a scale factor of 0.77 with the origin as the center of dilation? F (-16.9, 16.9), (33.8, 67.6), (50.7, 50.7)
 - G (-10, 10), (20, 40), (30, 30)
 - H (10, 10), (-20, 40), (-30, 30)
 - J (16.9, 16.9), (33.8, 67.6), (50.7, 50.7)
 - 5. A square has a side length of 2.5 feet. If the square is dilated by a factor of 2.5, what is the length of a side of the new square?
 - A 3.75 C 5 B 4.25 D 6.25
 - In the figure below, line $e \parallel$ line f. Which statement is true?



7. If the congruent angles of an isosceles triangle each measure 41° , what is the measure of the third angle? A 41° C 98° B 59° D 118°

8. Two angle measures of a triangle are 44° and 101°. What is the measure of the other angle? 35° 56° F Η G 44° J 79°

- 9. The lengths of the legs of an isosceles triangle are 8 in. Which could be the length of the base? A 15 in. C 17 in.

 - B 16 in. D 20 in.

- 10. Square *ABCD* lies entirely in quadrant II. It is reflected over the *y*-axis, and then rotated 180° clockwise about the origin. In what quadrant is the image after the combined transformation?
 - F quadrant I
 - G quadrant II

- H quadrant III
- J quadrant IV
- 11. A triangle has coordinates A(-2,-1), B(-1,2), C(1,-2). If the triangle is reflected across the y-axis, what are the new coordinates of the triangle?
 - AA'(-2,-1), B'(-1,2), C'(1,-2)BA'(2,-1), B'(1,2), C'(-1,-2)CA'(-2,1), B'(-1,-2), C'(1,2)DA'(2,1), B'(1,-2), C'(-1,2)
 - 12. A square has vertices T(1, 2), U(4, 2), V(4, 5), W(1, 5). If the square is rotated clockwise 90 degrees around (0, 0), what are the coordinates of W?
 - F
 (5,-1) H
 (2,-4)

 G
 (5,-4) J
 (2,-1)
- _____ 13. What is the type of transformation?



- A rotation 90° counterclockwise about poir
- B reflection about the *y*-axis
- C rotation 90° clockwise about point D
- D reflection about the *x*-axis

14. Which describes the transformation from the original to the image, and tells whether the two figures are similar or congruent?



- G translation, congruent
- H reflection, congruent
- J dilation, similar
- 15. What are the coordinates of the image of the point (11, 1) after a translation 10 units down followed by a reflection over the *y*-axis?

CRCT	T WE	EK 2			
	16.	What is the reciprocal of 3 ⁻³ F -27 G -9	H J	9 27	
	17.	Simplify.			
		10 ⁻⁴ A 0.00001 B 0.0001	C D	1000 10,000	
	18.	Simplify.			
		2 ⁻⁴ F -16	Н	$\frac{1}{16}$	
		$G = \frac{1}{16}$	J	16	
	19.	Simplify.			
		$4^{3} \cdot 4^{3} \cdot 4^{2} \cdot 4^{3}$ A $_{4}9$	С	₄ 11	
		B 410	D	4 256 ¹⁰	
	20.	Simplify. $\frac{f^7}{\sigma^3}$			
		F fg ⁴		G	fg ¹⁰
		$\frac{H}{g}$		J	Cannot simplify
	21.	Simplify. $\frac{6^5}{6^3}$			
		A 1 B 12	C D	36 216	
	22	Which expression is equivalent to the expression	on 2	$8 + 2^{4}2$	
	<i></i> ,	F_{4}^2	Н	2+4	
		G 8	J	12	
	23.	Write the number in standard notation.			
		A 0.00142 B 0.0142	C D	1.42 142	
	24.	Which shows the number 4,300,000 written in	scie	ntific notati	ion?
		r 43 × 10 ² G to to 5	н Ј	4.3 × 10 ⁰	7
		4.3×10 ⁻¹	-	U.43 x 10 '	

 25.	Write the number in scientific notation.		
	0.000721		
	A 0.721×10^{-5}	С	7.21×10^{-4}
	^B 7.21×10^{-5}	D	721×10^{-4}
 26.	Which is the quotient of $\left(2.003 \times 10^{24}\right) \div \left(9.3\right)$	21 ×	10^2 in scientific notation?
	F 2 175 × 10 ¹¹	Η	2 175 x 10 ²³
	G 2 175 × 10 ²¹	J	2 175 × 10 ²⁶
	2.175 x 10		2.175 x 10
 27.	Which is the product of $\left(2.49 \times 10^{11}\right) \times \left(8.62\right)$	2 × 10	9 in scientific notation?
	A 2 146 × 10 ¹⁹	С	2.146×10^{21}
	B 2 146 × 10 ²⁰	D	2.146 × 10.99
	2.140 X 10		2.140 X 10
28	Write the sum in scientific notation: 8×10^{12}	⊦бх	1011
 20.	$F_{1,4,1,10}$ 12	Н	141011
	G 12	T	14 X 10 23
	8.6×10 ¹²	J	1.4×10^{23}
20		- 1 <i>5</i> '	7105 m 1 67 : 1
 29.	About how much more was the population of L	[2.) Iama	ica than Barbados?
	A to toll	C	
	1.0 × 10°	D	2.473 × 10°
	^B 1.6×10 ¹	D	2.473×10^{9}
	42		
 30.	Simplify the fraction $\frac{1}{90}$. Choose the best answ	ver.	
	F 7	Η	16
	15		30
	G <u>9</u>	J	22
	15		45

31. In the figure, line $m \parallel$ line n. What is the measure of angle 4?



32. Does the transformation show a dilation? If yes, describe the dilation. If no, explain.



- 33. $\triangle QRS$ with vertices Q(3, 1), R(4, -1), and S(5, 3) is rotated 90° counterclockwise about the origin. Where are the vertices of $\triangle Q^{\dagger}R^{\dagger}S^{\dagger}$?
- 34. If line $m \parallel$ line n and $\angle 7$ measures 56°, what is the measure of $\angle 1$?



35. . How has figure *DEF* been transformed to form figure *ABC*?



CRCT WEEK 3

36	. E	xpress the fraction $\frac{3}{4}$ as a decimal.			
		A 0.25 B 0.34	C D	0.75 1.33	
	37.	Simplify the expression.			
		√9+16 F 4	Н	7	
		G 5	J	25	
	38.	Simplify the expression. $\sqrt{64}$			
		$\begin{array}{c} \sqrt{64} - \sqrt{36} \\ A & 0 \end{array}$	С	5.29	
		B 2	D	10	
	39.	Simplify the expression. $11 + \sqrt{25}$			
		F 6 G 12	H	16 36	
	10		J	50	
	40.	Between what two integers does $\sqrt{132}$ lie? A 10 and 11	С	12 and 13	
		B 11 and 12	D	13 and 14	
	41.	Between what two integers does $-\sqrt{47}$ lie?	н	-6 and -5	
		G -5 and -4	J	-7 and -6	
	42.	What kind of number is $-\sqrt{2}$?			
		A rational		B irrational	
		C not a real number		D natural number	
	43.	Which of the following is NOT a real number? $F -10$	Н	./25	
		G5	J	$\sqrt{\frac{25}{26}}$	
	44.	Which lists the most names for the number 5.5?	?		
		A real number		B real number, rational number	
		C real number, positive integer		D rational number, whole number	ber
	45.	What kind of number is 0? F rational		G irrational	
		H not a real number		I negative number	
	46.	Solve $x + \frac{4}{4x} = \frac{2}{2}$.			
		A 14	С	2	
		$A = \frac{15}{15}$	D	$x = \frac{1}{5}$	
		$x = -\frac{6}{15}$		$x = -\frac{14}{15}$	

	47.	Solve $2 - z = 4.5$. F 2.5 G 6.5	H J	-2.5 -6.5
	48.	Which value of t is the solution for the equation A $t = 5.75$	n 9.4 C	t = 6.2 t = 12.15
	49	B $t = 0.12$ What is the value of k for this equation: $\frac{k}{k} = \frac{1}{2}$	D 139	<i>t</i> = 13.15
	ч у .	F 0.123 G 8 125	H I	11.4 20.8
	50.	What is the value for <i>m</i> for this equation: $3m - 4$	6.8 ·	= 31?
		B 12.6	D	40.8
51. Si	impli	$f_{y}(-4)^{-2}$.		

52. Simplify. Write your answer in exponential form. $(-3)^2 \times (-3)^3$

- 53. Between what two integers does $\sqrt{136}$ lie?
- 54. Between what two integers does $-\sqrt{34}$ lie?
- 55. State if the number is rational or irrational. $\sqrt{27}$
- 56. Find a real number between $\sqrt{169}$ and $(-5)^2$.

CRCT	WE	EK 4		
	57.	Solve $6d + 4 + 5d - 2d = 58$. F $d = 13d$ G $d = 10$	H J	d = 6 $d = 13d + 4$
	58.	Solve for x: $4x - 8 = 16$. A -2 B 2	C D	6 8
	59.	Solve $\frac{h}{2} + \frac{h}{5} = 14$. F $h = 16$ C $h = 20$	H	h = 24
	60.	Solve $9y - 6 + y + 8 = 42$. A $y = 4$ B $y = 5$, C D	y = 8 $y = 10$
	61.	Chris has a job selling newspapers every n cents for every paper he sells. One morning F 39	norning. g he mao H	He receives a base pay of \$10 per day and also gets 15 de \$16.45. How many papers did he sell? 52
	62.	Solve $2(s-4) - 7 = -19$. A $s = -3$ B $s = -2$	J C D	s = 2 s = 3
	63.	Solve $\frac{n}{2} + 7 = 22$. F $n = 15$	Н	n = 30
	64.	G $n = 26$ Solve $12x + 15 = 24 - 6x$. A 1	J C	n = 58 n = 58
		$x = \frac{1}{2}$ B $x = 1\frac{1}{2}$	D	$x = 2\frac{1}{6}$ $x = 6\frac{1}{2}$
	65.	Solve $\frac{3w}{2} + \frac{1}{2} = w + 4$. F $w = 3$ G $w = 4$	H J	w = 7 w = 8
	66.	Solve $\frac{2x}{3} - 8 = x + 7$.		
		$\begin{array}{ll} A & x = -45 \\ B & x = 1 \end{array}$	C D	$ \begin{array}{l} x = 3 \\ x = 9 \end{array} $
	67.	Find the missing length.	0	II 14 mile
		12 V208 F G	8 units 10 units	H 14 units S J 15 units

____ 68. Find the hypotenuse of the right triangle that has legs of 5 ft and 7 ft.

А	$\sqrt{12}$ ft	С	√74 ft
В	12 ft	D	74 ft

69. An isosceles right triangle has legs that are 10 cm in length. What is the length of the hypotenuse to the nearest tenth?

F	11.4 cm	Η	14.1 cm
G	12.8 cm	J	20.0 cm

70. A 15-foot ladder is leaning against a wall. If the top of the ladder is 14.5 feet up the wall, how far is the base of the ladder on the ground from the wall? Round to the nearest tenth.

- A
 2.4 feet
 C
 3.1 feet

 B
 2.7 feet
 D
 3.8 feet
- _____ 71. A triangle has vertices with coordinates A(1, 1), B(1, 7), and C(3, 1). What is the length of the hypotenuse of the triangle?
 - F 6 unitsH $\sqrt{32}$ unitsG $\sqrt{40}$ unitsJ 7 units
- ____ 72. Which triangle is a right triangle?



С





- 73. Which of the given side lengths form a right triangle?
 - F 9 in., 12 in., 13 in.
 - G 15 in., 12 in., 9 in.
 - H 12 in., 9 in., 17 in.
 - J 21 in., 12 in., 9 in.
 - 74. Solve y + 18.7 = 26.
 - 75. Solve -22 + 8j = 14.
 - 76. Solve $\frac{x}{3} + 6 + \frac{5x}{6} = 27$.
 - 77. Alan bought CDs at a secondhand store. He spent a total of \$48. He bought 3 CDs for a total of \$15 and 2 more CDs for a total of \$18. How many more CDs did Alan buy if his average cost per CD was \$6?

CRCT WEEK 5

- 78. Find the distance between points (-1, 6) and (2, -3) to the nearest tenth.
 - A 9.9 C 9.1
 - B 9.5 D 8.6
- _____ 79. A right triangle has a hypotenuse of 20 inches. Which of the following could be the lengths of the legs of the triangle?
 - F 6 inches and 8 inches
 - G 8 inches and 12 inches
 - H 12 inches and 16 inches
 - J 10 inches and 10 inches
- 80. Which expression correctly shows using the distance formula to calculate the hypotenuse of the triangle?



81. A rainwater collection tank is shaped like a cylinder with a diameter of 4 ft and a height of 6 ft. What is its volume? Use 3.14 for π .

F	37.7 ft^3	Η	150.7 ft^3
G	75.4 ft^3	J	301.4 ft^3

82. Find the volume of a rectangular prism with base 2 units by 3 units and height 5 units.

А	15 units ³	С	30 units^3
В	20 units^3	D	62 units^3

_____ 83. Find the volume of the figure below to the nearest tenth. Use 3.14 for π .



- G 1017.4 cm^3 J 9495.4 cm^3
- 84. Find the volume of the figure below. Use 3.14 for π .



85. Find the volume of the figure below.



91. Identify the equation for the function represented in the graph below.



92. Which table displays points that will lie on the graphed line?



93. Which equation describes the line shown on the graph?



- 94.A triangle has vertices with coordinates X(3,-2), Y(-1,-2), and Z(-1,4). Find the perimeter of the triangle to the nearest tenth.
- 95.An equilateral triangle has side lengths of 40 meters. A perpendicular segment is drawn from a vertex to the midpoint of the opposite side, as shown. How long is the segment?



96. Find the volume of the figure.



- 97. Write a linear function that passes through the points (1,5) and (3,-2).
- 98. Use the graph of f(x) below, $g(x) = \frac{1}{2}x + 6$, and the table of h(x). Compare the slopes of the three functions. How did you determine each slope?



x	0	1	2	3
h(x)	4	6	8	10

CRCT WEEK 6

99. Which of these functions is a linear function?

A
$$y = \frac{12}{x}$$

B $y = 12x$
C $y = 12x^2$
D $y = 12^x$

_____ 100. Identify the rule for the linear function.



101. A copy center charges a \$2.50 fee for making color copies and \$0.50 for each copy. Which rule gives the cost for x color copies?

А	y = 0.5x + 0.5	С	y = 2.5x + 0.5
В	y = 0.5x + 2.5	D	y = 2.5x + 2.5

102.	Which of the following equations is <i>not</i> linear?		
	F y = x + 6	Η	$y = 2x^2$
	G $y = -8$	J	y = 9x

103. The formula for converting temperature from Celsius to Fahrenheit is $f = \frac{9}{5}c + 32$ where *c* is the temperature in Celsius. If the temperature is 21° Celsius, what is the temperature in degrees Fahrenheit?

A 21.0°F C 69.8°F B 45.5°F D 72.3°F

_____ 104. What is the slope of the line that passes through the two points (1,7) and (-1,6)?

F	1	Η	1
	-3		2
G	2	J	3
	-3		2

_____ 105. What is the slope of the line in the figure below?



- _ 106. Identify the x- and y-intercepts for the line 8x + 4y = 16. H x = 8, y = 4J x = 0, y = 0F x = 1, y = 5G x = 2, y = 4
- 107. Express the equation 2x 6y = 8 in slope-intercept form. Ĉ $y = \frac{1}{2}x - \frac{3}{2}$ A y = 2x - 6^B $y = \frac{1}{3}x - \frac{4}{3}$ D y = 3x - 4

108. Find the equation that has a slope of $-\frac{1}{8}$ and passes through the point (0, -4).

F	$y = -\frac{1}{4}x - 8$	Н	$y = \frac{1}{4}x - 4$
G	$y = \frac{1}{8}x$	J	$y = -\frac{1}{8}x - 4$

_ 109. The data set below represents a direct variation. Identify the constant of proportionality.

	X	1	2	3	4	5	6	7		
	У	$\frac{9}{2}$	9	<u>27</u> 2	18	<u>45</u> 2	27	$\frac{63}{2}$		
ŀ	A <u>2</u> 9							C		$\frac{9}{2}$
ł	39							Γ)	2

_ 110. Find the equation of direct variation, given that y varies directly with x, and x is 36 when y is 99.

F	y = 99x	Н	y = 36x
G	$y = \frac{11}{4}x$	J	$y = \frac{4}{4}x$
	* 4		۲ II

_____111. The graph shows how many seconds it takes for a garage door to open.



How many seconds does it take for the garage door to be half-way up?

- A 4 seconds C 6 seconds
- B 8 seconds D 16 seconds
- _____ 112. Identify the equation for the function represented in the graph below.



_ 113. Which table displays points that will lie on the graphed line?





114. Which equation describes the line shown on the graph?







- B negative correlation
- C positive correlation
- D both positive and negative correlation
- 116. Is the equation $y = \frac{2}{x} + 3$ a linear equation? Explain.
- 117. Find the equation of the line with slope -4 passing through (2, 2).
- 118. Graph the equation of the line with slope 0 passing through (4, -3).



- 119. If distance is represented on the *y*-axis and time on the *x*-axis, what does a line that is horizontal represent? Explain.
- 120. Tom rides his bike from home to his friend Bill's house. He then rides with Bill to the movies. After seeing a movie, he rides home. The movie theater is halfway to Bill's house from Tom's house. Draw a graph that might represent Tom's distance from home during this time.

Week 7

- 121. Which pair of data sets has a negative correlation?
 - F the total distance driven and the amount of tread on the tires
 - G the number of miles driven and the amount of gas used
 - H the number of passengers in a car and the number of driver's licenses
 - J the speed of the car and the rotation rate of its tires
- _____ 122. Which gives the line of best fit?



_ 123. What does the slope mean?



- F The slope of 24 tells how much an LCD TV increases in price for each 1 in. increase in diagonal length.
- G The slope of 24 tells how much the diagonal length increases in inches for each \$1 price increase.
- H The slope of 250 tells how much the diagonal length increases in inches for each \$1 price increase.
- J The slope of 250 tells how much an LCD TV increases in price for each 1 in. increase in diagonal length.

_____ 124. Solve the system.

x + y = -6

-22	x - 3y = 20		
Α	(-4,-2)	С	(2,-8)
В	(-8,2)	D	(0,6)

- 125. A dish is filled with nickels and dimes, 33 coins in all. If the value of the coins is \$2.65, how many dimes are there?
 - F 18 H 20
 - G 19 J 21

_ 126. Solve the system. x - y = 23y = 3(x - 2)A (3,1) B (-1,-3) C infinitely many solutions D no solution 127. The solution to the system below is (3, 2). What is the value of *a*? x + ay = 9-x + y = -1F -2 G -1 H 2 J 3 128. Tanya wants to solve the system below. She solves the first equation for y, then substitutes this expression for y into the 2^{nd} equation. Which shows the resulting equation? 2x + y = 35x + 2y = 1A 5x + 2(-2x + 3) = 1B 5x + 2(-2x + 3) = 3C 2x + (-2x + 3) = 3D 5x + (-2x + 3) = 1_ 129. Solve the system. -3x - 6y = -333x + y = 8F (1,2) Н (2,2) G (1,5) (3,7) J _____130. Solve the system. y = 4x + 5y = x - 4A (-3,-7) C (3,17) D (3,7) B (-3,7) _____131. Solve the system. 2x + 7y = 117y - 5 = -2xF (2,1) G (9,-1) H infinitely many solutions J no solution _____132. Marty graphs a system of equations, but only one line shows on the graph. What could this mean?

- A The system has a unique solution.
- B The system has two solutions.
- C The system has infinitely many solutions.

- D The system has no solution.
- 133. Which ordered pair is the solution of the system graphed below?



_____134. The graph of a system of linear equations is shown below. What is the solution of the system?



_____ 135. Triangle *ABC* is similar to triangle *DEF*. What is the value of *x*?



137. The two triangles are similar. Identify the scale factor of the dilation from the smaller triangle to the larger triangle.



138.Suppose another data point is added to the scatter plot at (7, 1). What is the name for such a data point?



139. Find an equation for the line of best fit that you drew.



140. Use your equation to predict the number of equations solved in 45 minutes.



141. Solve the system. 3x + 4y = -36

-2x + 4y = -16

- 142. Joe is giving out some coupons for 3 free hours of canoe rental. Melissa has 5 more coupons than Joe to give out, and her coupons are for 4 free hours of canoe rental. If their coupons represent 90 free hours of canoe rental in all, how many coupons do they each have?
- 143. Solve the system by graphing.

y = 5x + 3-5x + y = 8

144. Simplify 100^{-4} .

CRCT WEEK 8

145. A figure is dilated by a scale factor of 2.5. If the origin is the center of dilation, what are the coordinates in the original figure of a vertex located at (7, 9) in the enlarged figure?

Α	(3, 4)	С	(2.8, 3.6)
В	(4.5, 6.5)	D	(3.6, 2.8)

146. If line $m \parallel$ line n and $\angle 2$ measures 47°, what is the measure of $\angle 5$?



147. Which of the angles in the figure are supplementary to $\angle 7$?



_ 149. How has figure *DEF* been transformed to form figure *ABC*?



- B 180° rotation around (0, 0)
- C 90° rotation around (0, 0)
- D translation 2 units down

150. If triangle ABC is rotated 90° clockwise around the origin, what are the new coordinates of point C?



____ 151. Which describes the transformation from the original to the image, and tells whether the two figures are similar or congruent?



D rotation, congruent

 152.	Simplify 100^{-3} . F -1,000,000 G -0.03	H J	0.00001 0.000001
 153.	Simplify $(-2)^{-3} + (-2)^{-1}$. A -9	C	$-1\frac{1}{8}$
	B $^{-3}\frac{1}{8}$	D	$-\frac{5}{8}$
 154.	Simplify. $(1+3)^{0} + (2-4)^{-2} + 2^{-1}$ $F -\frac{1}{2}$ $G -\frac{1}{4}$	H J	$1\frac{3}{4}$ $6\frac{1}{2}$
 155.	Simplify $\left(25^3\right)^{10} \times 25$. A 25^{-5} B 25^{15}	C D	25 ³¹ 25 ⁶⁰
 156.	 What is the standard notation equivalent of 6.2 F 0.0062391 G 0.062391 	391 H J	× 10 ⁻² ? 0.62391 623.91
 157.	Write this number in scientific notation: 0.0009 A 0.562×10^{-3} B 5.62×10^{-4}	562. C D	562×10^{-6} 562×10^{-6}
 158.	The distance from Earth to the sun, about 1.50 nearest star, Proxima Centauri, is 2.6×10^8 ast Earth from the nearest star? F 3.9×10^8 km	× 10 ronc H J	8 kilometers, is known as an astronomical unit. The omical units from Earth. How many kilometers separate 3.9 × 10 ¹⁶ km
 159.	Which is the quotient of $\left(5.15 \times 10^{8}\right) \div \left(7.44\right)^{10}$ A 6.922×10^{2} B 6.922×10^{-1}	× 10 C D	$3.9 \times 10^{-7} \text{ km}$ $\left(3.9 \times 10^{-7} \text{ km}\right)$ in scientific notation? 6.922×10^{-2} 6.922×10^{-3}
 160.	Which is the product of $\left(8.22 \times 10^{12}\right) \times \left(9.5 \times 10^{13}\right)$ $F = 7.809 \times 10^{13}$ $G = 7.809 \times 10^{14}$	(10 H J	²) in scientific notation? 7.809 × 10 ¹⁵ 7.809 × 10 ²⁴

161.	Simplify the fraction $-\frac{34}{136}$.		
	$A = \frac{17}{8}$	С	$-\frac{1}{4}$
	$B = \frac{17}{68}$	D	$\frac{1}{4}$
162.	Write 0.048 as a fraction. Choose the best answer $E_{1} = 48$	er.	,

 $\begin{array}{ccccc} F & \frac{48}{1000} & & H & \frac{6}{125} \\ G & \frac{12}{250} & & J & \frac{6}{25} \end{array}$

163.Write 1.9×10^{-5} in standard notation.

164. $\frac{w + 10.1}{1.3} = 2.6$

165. 3.5y + 7.73 = 25.23166. Solve $\frac{7}{8} + \frac{2a}{12} = \frac{3a}{4} + \frac{1}{3}$.

167. Find the distance between points (-6, 0.5) and (-6, -4.3) to the nearest tenth. CRCT WEEK 9

168.	Write $\frac{9}{40}$ as a decimal.		
	A 0.0225	С	0.175
	B 0.09	D	0.225

170. A square area of land is 529 square feet. What is the length of one side of a fence around this area? A -23 feet B 13 feet C 23 feet D 33 feet

 $\begin{array}{c} \hline \\ & 171. \\ & F \\ & F \\ & -7 > -\sqrt{70} > -7.5 \\ & G \\ & -7.5 > -\sqrt{70} > -8 \\ & H \\ & -8 > -\sqrt{70} > -8.5 \\ & J \\ & -8.5 > -\sqrt{70} > -9 \end{array}$

<u>172.</u> A fence surrounds a square-shaped 600 ft^2 meadow. To the nearest tenth of a foot, find the length of one side of the fence.

А	23.9 ft	С	24.9 ft
В	24.5 ft	D	25.2 ft

____ 173. Which of the following is an irrational number?

	$F = \sqrt{254}$	Η	$\frac{159}{7}$
	G 0.6	J	$\sqrt{361}$
174.	Which of the following is an irrational number $A = \pi B = \sqrt{4}$? C D	$\sqrt{0}$ $\sqrt{16}$
175.	Find a real number between $\sqrt{169}$ and $(-4)^2$. F $\sqrt{180}$	Н	$11\frac{1}{2}$
	G	J	16.253
176.	Solve <i>m</i> + 64.06 = 87. A 10.94 B 12.94	C D	22.94 151.06
177.	Solve $y - 15.94 = 29.3$. F 34.24 G 35.24	H J	44.24 45.24
178.	Solve $\frac{y-16}{5} = 13$. A $y = 49$ B $y = 50$	C D	y = 71 $y = 81$
179.	Solve $\frac{1}{2}y + 10 = -25$. F $y = -70$ G $y = -35$	H J	y = -30 y = 70
180.	Solve $\frac{x+6}{2} + \frac{3x}{8} = 17$. A $x = 5$ B $x = 12\frac{1}{4}$	C D	x = 16 $x = 24$

_____ 181. Solve for the unknown side of the right triangle. Round to the nearest hundredth.



182. The bottom of a ladder is placed 4 feet from the side of a building. The top of the ladder must be 13 feet off the ground. What is the shortest ladder that will do the job?

А	10 ft	С	14 ft
В	12 ft	D	16 ft

_____183. Which group of numbers could be the measures of the sides of a right triangle?

F	0.01, 0.03, 0.06	Η	10, 12, 13
G	8, 25, $\sqrt{685}$	J	10, 24, 26

184. Find the volume of the rectangular pyramid.



- 185. To the nearest tenth, find the volume of a sphere with a diameter of 9 cm. Use 3.14 for π .
- 186. Find the volume and surface area of a sphere with a radius of 1.8 cm to the nearest tenth. Use 3.14 for π .
- 187. Determine if the relationship represents a function.



188. Write the equation that represents the values in the table below.

x	-6	8	2	-4
у	-19	-29	1	31

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189. The distance between point (-3, 6) and another point is 10. What are the possible coordinates of the other point?

Â	(5,2)	С	Both A and B
В	(5,12)	D	Neither A nor B

190. Find the volume of this figure to the nearest hundredth. Use 3.14 for π .

→ ^{7 cm}		
12 cm		
$\begin{array}{ccc} F & 340.86 \text{ cm}^3 \\ G & 461.58 \text{ cm}^3 \end{array}$	H J	835.66 cm^3 1846.32 cm ³

_____ 192. Find the volume of the figure shown to the nearest tenth.



193. A cone has a diameter of 16 inches and a height of 5 inches. Find the volume of the cone to the nearest tenth. Use 3.14 for π .

Α	334.9 in^3	С	1340.4 in ³
В	438.2 in^3	D	1646.9 in ³

<u>194</u>. Find the volume of the rectangular pyramid.



195. To the nearest tenth, find the volume of a sphere with a diameter of 36 cm. Use 3.14 for π .

A $4,071.5 \text{ cm}^3$ C $24,416.6 \text{ cm}^3$ B $16,286.02 \text{ cm}^3$ D $195.432.2 \text{ cm}^3$

_____ 196. Find the volume and surface area of a sphere with a radius of 2.2 m to the nearest tenth. Use 3.14 for π .

F Surface Area: 27.6 m^2 Volume: 44.6 m^3 G Surface Area: 27.6 m^2

- Volume: 79.3 m^3 H Surface Area: 60.8 m^2
- Volume: 44.6 m^3
- J Surface Area: 60.8 m² Volume: 79.3 m³

_____ 197. Which equation describes *w*?

	а	-2	-1	0	1	2	
	w	-2.8	-2.3	-1.8	-1.3	-0.8	
A	w =	0.5 <i>a</i> –	1.8				
B	w =	0.5a +	1.8				

- C w = 0.5(a 1.8)D w = 2a + 1.2
- 198. Which set describes 0.4a 2?

а	-2	-1	0	1	2
w	-2.8	-2.3	-1.8	-1.3	-0.8
x	-2.8	-2.4	-2.0	-1.6	-1.2
y	-2.8	-2.4	-2.0	0	0.4
z	-2.8	-1.8	-0.8	0.3	1.2

G x

J z

- _____ 199. List two points on the graph of $y = \frac{2}{3}x + 5$.
 - A(-3,7), (3,7)C(0,5), (-2,2)B(6,9), (-6,-9)D(-3,3), (3,7)
- _____ 200. Which of these functions is *not* a linear function?

F
$$y = x^2 - x$$

G $y = 1 - x$
H $y = \frac{x}{3}$
J $y = \frac{2}{3}x - 2x$

201. Karl needs \$3.00 per day for lunch and wants to have \$8.00 extra. Which rule tells how much he needs for x days?

A

$$y = 8x + 3$$
 C
 $y = 3x \div 8$

 B
 $y = 3x + 8$
 D
 $y = 3x - 8$

_____ 202. What is the rule for this linear function?



____ 203. Which data table is described by the linear function y = -0.3x?

A	x	1	2	3	4
	y	0.1	0.3	0.9	2.7
B	x	1	2	3	4
	у	-0.1	<mark>0</mark> 3	-0.9	2.7
С	x	1	2	3	4
	y	-0.3	0.9	-2.7	8.1
D	x	1	2	3	4
	y	-0.3	-0.6	-0.9	-1.2

____ 204. Which of the following equations is *not* linear? F 6x = 7 H y = x + 4

$$G_{-0.5x^2 = y} \qquad \qquad J \quad y = x$$

205. A cone has a diameter of 9 inches and a height of 12 inches. Find the volume of the cone to the nearest tenth. Use 3.14 for π .

а	0	1	2	3	4
w	-5	-6	-7	-8	-9
x	-3	-2	1	6	13
y	-13	-9	-5	-1	3
Z	2	5	8	11	14

206. Which set of values is described by the expression -a - 5?

207. Use the graph of f(x) below, g(x) = 5x + 5, and the table of h(x). Compare the slopes of the three linear functions. Explain how you determine each slope.

			y 4		-	-
-	-	fut	4			
			2			
-6	-4		0	2	4	6 x
			-2			
			-4			
			-6			

x	1	2	3	4
h(x)	6	11	16	21

208. Use the graph of f(x) below, g(x) = 5x + 5, and the table of h(x). Compare the *y*-intercepts of the three linear functions. Explain how you determine each *y*-intercept.

-

			6		-	
-	-	-fuo	4			
			2			
6	-4		0	2	4	6 x
			2			
-			4			
			6			

x	1	2	3	4
h(x)	6	11	16	21

209. Determine whether the equation is linear: $y = -\frac{1}{3}x - \frac{2}{5}$.

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_____ 210. Find the equation for the line.



____ 216. What is the slope-intercept form of the line passing through the point (-3, -6) and having slope $\frac{1}{8}$?

A
$$y = \frac{1}{8}x - \frac{9}{4}$$

B $y = \frac{1}{8}x - 5\frac{5}{8}$
C $y = -\frac{1}{8}x - 3$
D $y = 8x - 3$

_____ 217. What is an equation for the line that passes through $\left(-2, -3\right)$ with a slope of $-\frac{1}{2}$?

F4y + 2x = 7H4y + 2x = -16G4y - 2x = -12J5y - 4x = 12

_____ 218. What is the point-slope form equation for the line with a slope of $-\frac{2}{3}$ that passes through (5, 2)?

- A $y-5 = -\frac{2}{3}(x-2)$ B $y-2 = -\frac{2}{3}(x-5)$ C $y+5 = -\frac{2}{3}(x-2)$ D $y+2 = -\frac{2}{3}(x-5)$
- 219. Which equation gives the direct variation if y = -2 when x = 8?

F	y = -4x	Η	y = 4x
G	1	J	1
	$y = -\frac{1}{4}$		$y = \frac{1}{4}x$

_____ 220. Which of the following situations corresponds to this graph?



- A An object is lifted slowly, then lowered slowly.
- B A car accelerates from a stop, then gradually stops.
- C An object starts falling, accelerates, and then falls slowly.
- D An airplane climbs to 29,000 feet, then descends.

_____ 221. Which equation is graphed?



222. Which of the statements is true about the data displayed in the scatter plot? Minutes vs. Points



- A It shows a positive correlation.
- B It shows a negative correlation.
- C It shows no correlation.
- D As fouls increase, points decrease.
- _ 223. Use the scatter plot. Which gives the line of best fit?









- A The slope of 48 tells how much the leg length increases for each 1 year increase in age. The *y*-intercept is 0 cm and gives the leg length when the age is 0 years.
- B The slope of 35 tells how much the leg length increases for each 1 year increase in age. The y-intercept is $3\frac{1}{3}$ cm and gives the leg length when the age is 0 years.
- ^C The slope of $3\frac{1}{3}$ tells how much the leg length increases for each 1 year increase in age. The y-intercept is 0 cm and gives the leg length when the age is 0 years.
- D The slope of $3\frac{1}{3}$ tells how much the leg length increases for each 1 year increase in age. The y-intercept is 35 cm and gives the leg length when the age is 0 years.
- 225. Solve the system: 4x + 4y = 36

<i>x</i> =	$-\frac{1}{2}y + 6\frac{1}{2}$		
F	(-3,8)	Η	(4,5)
G	(-7,12)	J	(5,5)

226. Solve the system: x + y = 14

- 227. The sum of two numbers is 38. The larger number is 11 more than half the smaller number. What are the two numbers?

F	12, 26	Η	18, 20
G	14, 24	J	19, 21

____ 228. Estimate a solution to the system.







230. Write the quotient of $(6.72 \times 10^9) \div (3.2 \times 10^2)$ in scientific notation.

231. In 2010, the population of Sweden was about 9.413×10^6 . The population of Switzerland was about 7.783×10^6 . About how much more was the population of Sweden than Switzerland? Write your answer in scientific notation.

232. Graph the equation y = 0.5x - 2.



233. Find the slope of the line that passes through the points (-7, -5) and (4, -3).

- 234. Find the slope of the line that passes through the points (6, -3) and (-1, 2).
- 235. What is the *y*-intercept of the line represented by -3x 4y = 15?

236. What is the slope-intercept form of the line that passes through the point (-2, -18) and has a slope of $\frac{1}{4}$?

237. What is the equation of the line that passes through the point (3, -2) and has a slope of $-\frac{1}{5}$?

- 238. What is the point-slope form equation for the line that passes through the point $\left(-21, \frac{1}{2}\right)$ and has a slope of
 - $-\frac{1}{7}?$
- 239. Write the rule for the linear function.



240. The graph of a system of linear equations is shown below. Write the solution of the system.

