

March 2017 STAAR Grade 8 Math Rationales

Item #	Response A/F	Response B/G	Response C/H	Response D/J
1	A is incorrect because the graph shows a line that goes through the origin, which makes the linear relationship proportional.	B is correct because the graph shows a line that does not go through the origin, which makes the linear relationship non-proportional.	C is incorrect because the graph shows a line that goes through the origin, which makes the linear relationship proportional.	D is incorrect because the graph shows a line that goes through the origin, which makes the linear relationship proportional.
2	F is correct because the pentagon is translated 1 unit to the left and 10 units down, which is described by the transformation rule $(x - 1, y + 10)$.	G is incorrect because the pentagon is translated 1 unit to the left and 10 units down, which is described by the transformation rule $(x - 1, y - 10)$, not $(x + 1, y - 10)$.	H is incorrect because the pentagon is translated 1 unit to the left and 10 units down, which is described by the transformation rule $(x - 1, y + 10)$, not $(x - 1, y + 10)$.	J is incorrect because the pentagon is translated 1 unit to the left and 10 units down, which is described by the transformation rule $(x - 1, y - 10)$, not $(x + 1, y + 10)$.
3	\$ LV LQFRUUHF EHWZH HQ WKH This comparison is true.	% LV LQFRUUHF € HWZ Q Q WKH This comparison is true.	& LV FRUUHF € HWZ Q Q WKH This comparison is NOT true.	' LV LQFRUUHF € HWZ Q Q WKH This comparison is NOT true.
			dilation rule for P' can be found by multiplying each of the coordinates of (6, -3) by the scale factor, u, which is represented by (6u, -3u), (6 + 1/u, -3 + 1/u).	D is correct because the dilation rule for P' can be found by multiplying each of the coordinates of (6, -3) by the scale factor, u, which is represented by (6u, -3u).
6	F is incorrect because the slope can be found by the change in the gallons of gasoline, y, divided by the change in the number of miles driven, x, which is $-1/25$, not $1/25$. The y-intercept is 15, the number of gallons of gasoline when 0 miles were driven, not 375.	G is correct because the slope can be found by the change in the gallons of gasoline, y, divided by the change in the number of miles driven, x, which is $-1/25$. The y-intercept is 15, the number of gallons of gasoline when 0 miles were driven.	H is incorrect because the slope can be found by the change in the gallons of gasoline, y, divided by the change in the number of miles driven, x, which is $-1/25$, not $1/25$. The y-intercept is 15, the number of gallons of gasoline when 0 miles were driven.	J is incorrect because the slope can be found by the change in the gallons of gasoline, y, divided by the change in the number of miles driven, x, which is $-1/25$, not $1/25$. The y-intercept is 15, the number of gallons of gasoline when 0 miles were driven, not 15.
7	A is incorrect because the formula for volume of a cylinder is $V = \pi r^2 h$. F \ O L Q G H U and V e 9 U D G L X V ² h, V Q R W 9 ² . O E K	B is incorrect because the formula for volume of a cylinder is $V = \pi r^2 h$. F \ O L Q G H U L V 9 R 9 O E	O E U	
	the values in the milliliters column, m, to be 29.57 divided by the corresponding values in the fluid ounces column, f, multiplied.	G is incorrect because it does not show the values in the milliliters column, m, to be 29.57 multiplied by the corresponding values in the fluid ounces column, f.	H is incorrect because it does not show the values in the milliliters column, m, to be 29.57 multiplied by the corresponding values in the fluid ounces column, f.	J is correct because it shows the values in the milliliters column, m, to be 29.57 multiplied by the corresponding values in the fluid ounces column, f.

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9	A; 32.5 is correct because using the Pythagorean Theorem, $a^2 + b^2 = c^2$ gives, $26^2 + 19.5^2 = 1056.25$ and the square root of 1056.25 is 32.5.	B; Students may have added $19.5 + 26 = 45.5$ or multiplied $19.5 \times 26 = 507$.		
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17	A is incorrect because $\frac{AE}{VZ} = \frac{CD}{VZ}$ does not represent the true proportion of the lengths of the corresponding sides of the given similar figures.	B is incorrect because $\frac{VZ}{DE}$ does not represent the proportion of the lengths of the corresponding sides of the given similar figures.	C is incorrect because $\frac{BC}{DE}$ does not represent the proportion of the lengths of the corresponding sides of the given similar figures.	D is correct because $\frac{AB}{VZ}$ represents a true proportion of the lengths of the corresponding sides of the given similar figures.
18	F is incorrect because 0.00165 is written as 1.65×10^{-5} in scientific notation, not 1.65×10^5 .	G is correct because 0.00165 is written as 1.65×10^{-4} in scientific notation.	H is incorrect because 0.00165 is written as 1.65×10^3 in scientific notation, not 1.65×10^4 .	J is incorrect because 0.00165 is written as 1.65×10^2 in scientific notation, not 0.165×10^2 .
19	A is correct because the graph shows the cost of 5 dollars for every pound of pecan, which is represented by the function $y = 5x$.	B is incorrect because the graph shows the cost of 5 dollars for every pound of pecan, which is represented by the function $y = 5x$, not $y = \frac{1}{5}x$.	C is incorrect because the graph shows the cost of 5 dollars for every pound of pecan, which is represented by the function $y = 5x$, not $y = 2x$.	D is incorrect because the graph shows the cost of 5 dollars for every pound of pecan, which is represented by the function $y = 5x$, not $y = \frac{1}{2}x$.
20	F is incorrect because the dilation rule $(\frac{1}{4}x, \frac{1}{4}y)$ creates a pentagon that is smaller than the original pentagon, not a larger pentagon. The $\frac{1}{4}$ scale factor is less than 1, not greater than 1.	G is correct because the dilation rule $(\frac{1}{4}x, \frac{1}{4}y)$ creates a pentagon that is smaller than the original pentagon. The $\frac{1}{4}$ scale factor is less than 1.	H is incorrect because the dilation rule $(\frac{1}{4}x, \frac{1}{4}y)$ creates a pentagon that is smaller than the original pentagon. The $\frac{1}{4}$ scale factor is less than 1, not greater than 1.	J is incorrect because the dilation rule $(\frac{1}{4}x, \frac{1}{4}y)$ creates a pentagon that is smaller than the original pentagon, not a larger pentagon. The $\frac{1}{4}$ scale factor is less than 1.
21	A is correct because the formula for simple interest is $I = Prt$, so $I = 2,500(0.0475)(1.5)$, which is about 178.13. This option has the least amount of interest for the loan.	B is incorrect because the formula for simple interest is $I = Prt$, so $I = 2,500(0.0475)(1.5)$, which is about 178.13. This option has the least amount of interest for the loan, not $2,500(0.04)(2.5) = 250$.	C is incorrect because the formula for simple interest is $I = Prt$, so $I = 2,500(0.0475)(1.5)$, which is about 178.13. This option has the least amount of interest for the loan, not $2,500(0.0425)(2) = 212.5$.	D is incorrect because the formula for simple interest is $I = Prt$, so $I = 2,500(0.0475)(1.5)$, which is about 178.13. This option has the least amount of interest for the loan, not $2,500(0.045)(3) = 337.5$.
22	F is incorrect because the Pythagorean Theorem is $b^2 + a^2 = c^2$, so $10^2 + 8^2 = c^2$.			

	$\frac{1}{1000}$	$\frac{1}{1000}$	$\frac{1}{1000}$	$\frac{1}{1000}$

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33	A is correct because the Pythagorean Theorem is $b^2 = c^2$, so $12^2 + x^2 = 39^2$ which simplifies to $x^2 = 1,377$ and the square root of 1,377 is closest to 37.1.	B is incorrect because the Pythagorean Theorem is $b^2 = c^2$, so $12^2 + x^2 = 39^2$ which simplifies to $x^2 = 1,377$ and the square root of 1,377 is closest to 37.1, not 40.8.	C is incorrect because the Pythagorean Theorem is $b^2 = c^2$, so $12^2 + x^2 = 39^2$ which simplifies to $x^2 = 1,377$ and the square root of 1,377 is closest to 37.1, not 27.	D is incorrect because the Pythagorean Theorem is $b^2 = c^2$, so $12^2 + x^2 = 39^2$ which simplifies to $x^2 = 1,377$ and the square root of 1,377 is closest to 37.1, not 51.
34	F; 40 is correct because if Nicki can make 4 baskets in 1/2 hour, she can make 40 baskets in 8 hours.	G; Students may have multiplied 4 baskets times 5 hours to get 20 or multiplied times 5 to get 10.		
35	A is incorrect because the formula for simple interest is $I = Prt$ and the interest is 6, $5,000 = 1,500$, so $1,500 = 5,000(r)(4)$, and dividing both sides by 20,000 gives $r = 0.075 = 7.5%$, not 5.8%.	B is correct because the formula for simple interest is $I = Prt$ and the interest is 6, $5,000 = 1,500$, so $1,500 = 5,000(r)(4)$, and dividing both sides by 20,000 gives $r = 0.075 = 7.5%$.	C is incorrect because the formula for simple interest is $I = Prt$ and the interest is 6, $5,000 = 1,500$, so $1,500 = 5,000(r)(4)$, and dividing both sides by 20,000 gives $r = 0.075 = 7.5%$, not 3.3%.	

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40	F is incorrect because the scatterplot models a positive linear association, not a negative linear association, between the lanes rented and the number of people who bowl.	G is incorrect because the scatterplot models a positive linear association, not a negative linear association, between the lanes rented and the number of people who bowl.	H is incorrect because the scatterplot models a positive linear association, not a negative linear association, between the lanes rented and the number of people who bowl.	J is correct because the scatterplot models a positive linear association between lanes rented and the number of people who bowl.
41	A is incorrect because the formula for volume of a cylinder is $V = \pi r^2 h$. $\pi (10.5)^2 (9) \approx 296.88$, not 254.47.	B is correct because the formula for volume of a cylinder is $V = \pi r^2 h$. $\pi (10.5)^2 (9) \approx 296.88$.	C is incorrect because the formula for volume of a cylinder is $V = \pi r^2 h$. $\pi (10.5)^2 (9) \approx 296.88$, not 395.84.	D is incorrect because the formula for volume of a cylinder is $V = \pi r^2 h$. $\pi (10.5)^2 (9) \approx 296.88$, not 197.92.
42	F is incorrect because the lines appear to intersect at day 18, not day 15.	G is incorrect because the lines appear to intersect at day 18, not day 48.	H is incorrect because the lines appear to intersect at day 18, not day 33.	J is correct because the lines appear to intersect at day 18.

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