

Released Items Answer and Alignment Document

Mathematics – Grade 8

Spring 2019

Item Number	Entity ID	Answer Key	Evidence Statement Key
1.	VH174637	B, C, E	8.F.1-1
2.	VH007830	A, C	8.EE.2
3.	M20873	A, C, D, F, G	8.F.3-1
4.	VH059564	D	8.NS.1
5.	VF523722	5	8.EE.1
6.	M21618	B	8.EE.8b-3
7.	M20383P	A, D, E	8.SP.1
8.	M22324	B	8.EE.5-1
9.	VH074487	Part A: D Part B: 17	8.EE.C.Int.1
10.	VH024103	See Rubric	8.D.4
11.	VH139356	The slope of Function A is <input type="text" value="less than"/> the slope of Function B. The y-intercept of Function A is <input type="text" value="greater than"/> the y-intercept of Function B.	8.F.2
12.	M21301	C	8.EE.4-2
13.	M20195	See Rubric	8.C.4-1
14.	VF650877	Part A: C Part B: B	8.SP.3
15.	M21703	See Rubric	8.D.1
16.	1095- M20627	Part A: 11 Part B: 1206	8.G.9
17.	VH074629	Part A: A Part B: See Rubric	8.C.1-2
18.	VH075398	Part A: C	8.EE.8c

	Part B: B Part C: 1.75 Part D: C	
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#10 VH024103 Rubric	
Score	Description
3	<p>Student response includes the following 3 elements.</p> <ul style="list-style-type: none"> • Computation component = 1 point <ul style="list-style-type: none"> ○ The student correctly expresses the final result, 9.9×10^4 in scientific notation. • Reasoning component = 1 point <ul style="list-style-type: none"> ○ The student uses an appropriate strategy to calculate the number of gallons of water in Lap Pool A based on the number of gallons of water in Lap Pool B. • Reasoning component = 1 point <ul style="list-style-type: none"> ○ The student provides a response that indicates that the capacity of Lap Pool B is approximately 6 to 7 times the capacity of Lap Pool A, or that the capacity of Lap Pool A is approximately $\frac{1}{6}$ to $\frac{1}{7}$ the capacity of Lap Pool B. <p>Sample Student Response:</p> <p>Lap Pool A looks to be about $\frac{1}{2}$ the length of Lap Pool B. And Lap Pool A looks to be $\frac{3}{10}$ the width of Lap Pool B because it has only 3 lanes compared to the 10 lanes in Lap Pool B. Since $\frac{1}{2} \times \frac{3}{10} = \frac{3}{20}$, Lap Pool A is about $\frac{3}{20}$ the capacity of Lap Pool B. Multiplying it out, I get $(6.6 \times 10^5) \times \left(\frac{3}{20}\right) = \frac{(19.8 \times 10^5)}{20} = 0.99 \times 10^5$. To change 0.99×10^5 to scientific notation, I need to move the decimal one place to the right and decrease the exponent on the 10 by 1. So the estimated number of gallons of water in Lap Pool A is 9.9×10^4.</p> <p>Or other valid response.</p> <p>Notes:</p> <ul style="list-style-type: none"> • The values calculated in the Computation and Reasoning Components may differ from the examples shown. As long as the amounts provided follow from student provided Reasoned Estimates, credit should be awarded for the Computation and first Reasoning Component.

	<ul style="list-style-type: none"> The method used to get the final answer in scientific notation may differ. Students may set the problem up differently and not need to shift the decimal point. For example, a student may set up the expression as $(6.6 \times 10^5) \times \left(\frac{1}{2}\right)\left(\frac{3}{20}\right)$ and evaluate it as follows: $(6.6 \times 10^5) \times \left(\frac{1}{2}\right)\left(\frac{3}{20}\right) = \frac{(3.3 \times 3 \times 10^5)}{10} = 9.9 \times 10^4$. In this case, the student would receive the computation point for performing operations with numbers in scientific notation. The student may receive a combined total of 2 points if the reasoning processes are correct, but the student makes one or more computational errors. The student may receive a total of 1 point if they compute the correct answer but show no work or insufficient work to indicate a correct reasoning process. The student cannot receive more than 2 points if the explanations, while sufficient to indicate that the student had correct reasoning, contain nonsense statements.
2	Student response includes 3 of the above elements.
1	Student response includes 1-2 of the above elements.
0	Student response is incorrect or irrelevant.

#13 M20195 Rubric	
Score	Description
4	<p>Student response includes the following 5 elements.</p> <ul style="list-style-type: none"> Reasoning component = 1 element <ul style="list-style-type: none"> Student states that neither claim is possible. Reasoning component = 1 element <ul style="list-style-type: none"> Partial explanation for why company R's claim is impossible. Reasoning component = 1 element <ul style="list-style-type: none"> Complete explanation for why company R's claim is impossible (Note, the complete explanation states the number of years for each company to have 42 employees or states the number of years in the correct solution). A student receiving credit for a complete explanation for why company R's claim is impossible will also receive credit for a partial explanation. Reasoning component = 1 element

	<ul style="list-style-type: none"> ○ Partial explanation for why company T’s claim is impossible. • Reasoning component = 1 element <ul style="list-style-type: none"> ○ Complete explanation for why company T’s claim is impossible (Note, the complete explanation states the number of employees for each company in year 15 or states the number of employees in the correct solution). A student receiving credit for a complete explanation for why company T’s claim is impossible will also receive credit for a partial explanation. <p>Sample Student Response:</p> <p>Neither company’s claim is possible.</p> <p>Company R’s claim is not possible because the number of years is not equal for 42 employees. Company R has 42 employees after 6 years and company T has 42 employees after 8 years.</p> <p>Company T’s claim is not possible because company R has 69 employees after 15 years and company T has 70 employees after 15 years.</p> <p>Or other valid reasoning.</p> <p>Student response includes all 5 of the above elements.</p>
3	Student response includes 4 of the above elements.
2	Student response includes 3 of the above elements.
1	Student response includes 1-2 of the above elements.
0	Student response is incorrect or irrelevant.

#15 M21703 Rubric	
Score	Description
3	<p>Student response includes the following 3 elements.</p> <ul style="list-style-type: none"> • Computation component = 1 point <ul style="list-style-type: none"> ○ Correct number of ounces in the third box, 35 • Modeling component = 1 point <ul style="list-style-type: none"> ○ Correct equation that represents the price, p, of a box of cereal as a function of the number of ounces, x, in the box; $p = \frac{1}{5}x + 1$ or equivalent <p>Note: student may use any two letters provided what they represent is defined.</p>

	<ul style="list-style-type: none"> • Modeling component = 1 point <ul style="list-style-type: none"> ○ Valid work shown or explanation given <p>Sample Student Response:</p> <p>The equation is $p = \frac{1}{5}x + 1$, where x, represents the number of ounces in a box of this cereal and p, represents the price of a corresponding box of this cereal.</p> <p>The third box contains 35 ounces.</p> <p>I found the equation by using the coordinates (10,3) and (20,5) to find the slope and y-intercept. To find the slope, I calculated:</p> $\frac{(5 - 3)}{(20 - 10)} = \frac{1}{5}$ <p>To find the y-intercept, I substituted and solved for b:</p> $y = \frac{1}{5}x + b$ $5 = \frac{1}{5}(20) + b$ $b = 1$ <p>To find the weight of the third box, I solved the equation</p> $8 = \frac{1}{5}x + 1$ <p>Or other valid response.</p>
2	Student response includes 2 of the 3 elements.
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.

#17 VH074629 Rubric Part B	
Score	Description
2	<p>Student response includes the following 2 elements.</p> <ul style="list-style-type: none"> • Reasoning component = 1 point <ul style="list-style-type: none"> ○ The student indicates that for an equation to share more than one solution with line s, the equations must be equivalent.

	<ul style="list-style-type: none"> • Reasoning component = 1 point <ul style="list-style-type: none"> ○ The student provides an example of an equivalent equation. <p>Sample Student Response:</p> <p>The only way that there can be more than one solution to a system of equations is for the equations to be equivalent. The graphs of the equations would coincide. When the equations are equivalent, there are a infinite number of solutions. Every solution to one of the equations is a solution to the system of equations.</p> <p>If the equation is $3y = -9x+6$, then this equation would share infinitely many solutions with line s. I divided both sides of the above equation by 3 and simplified.</p> $3y/3 = (-9x + 6)/3; y = -3x + 2$ <p>This is the equation for line s; so, these two lines are equivalent and their graphs coincide.</p> <p>Or other valid response.</p>
1	Student response includes 1 of the 3 elements.
0	Student response is incorrect or irrelevant.