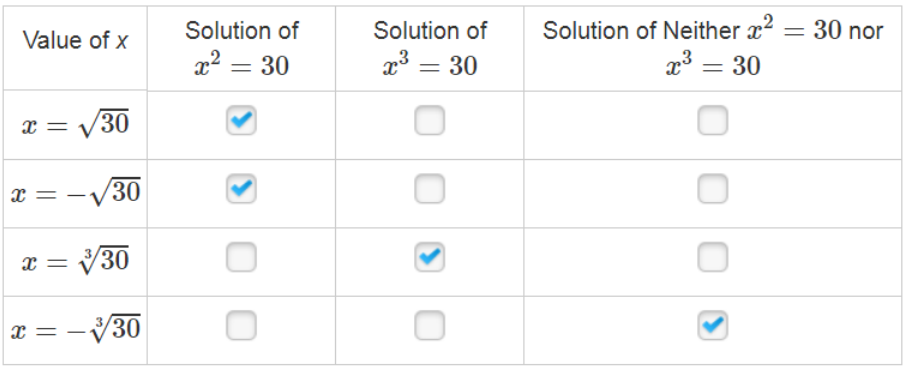
Released Test Answer and Alignment Document

Mathematics – Grade 8

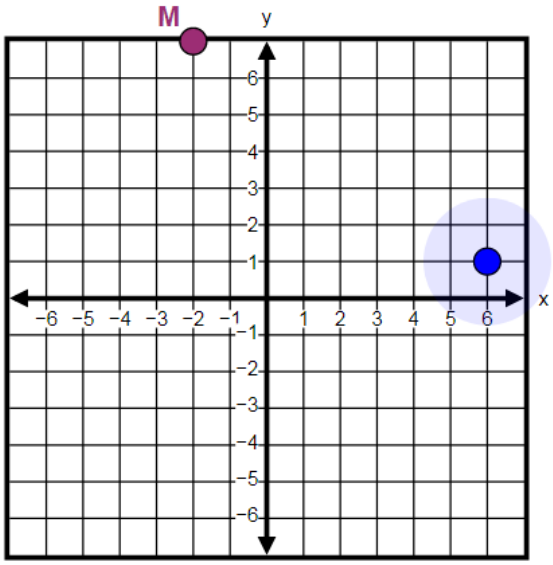
Spring 2017

Item Number	Answer Key	Evidence Statement Key
1.	D, E, F, G	8.F.1-1
2.	$m = \frac{59}{85}$ or equivalent	8.EE.7b
3.		8.EE.2
4.		8.EE.8b-3
5.	D, F	8.F.3-2
6.	C	8.EE.8a
7.	C	8.NS.1
8.	A	8.G.1a
9.	D	8.F.1-2

<table>
<tr><td>10.</td><td>
<table>
<tr><th>Expression</th><th>Equivalent to 3^2</th><th>Equivalent to 3^{-2}</th><th>Neither Equivalent to 3^2 nor 3^{-2}</th></tr>
<tr><td>$(3^{-1})^2$</td><td>☐</td><td>☑</td><td>☐</td></tr>
<tr><td>$(3^{-1})^{-1}$</td><td>☐</td><td>☐</td><td>☑</td></tr>
<tr><td>$\left(\frac{1}{3}\right)^2$</td><td>☐</td><td>☑</td><td>☐</td></tr>
<tr><td>$\left(\frac{1}{3}\right)^{-2}$</td><td>☑</td><td>☐</td><td>☐</td></tr>
</table>
</td><td>8.EE.1</td></tr>
<tr><td>11.</td><td>D</td><td>8.SP.1</td></tr>
<tr><td>12.</td><td>A</td><td>8.EE.5-1</td></tr>
<tr><td>13.</td><td>
Slope of the function is greater than the slope of Function 1

Slope of the function is equal to the slope of Function 1
$y = 3 + 2x$

Slope of the function is less than the slope of Function 1
$y = 2$
$y = \frac{3}{2}x + 6$
</td><td>8.F.2</td></tr>
<tr><td>14.</td><td>See Rubric</td><td>8.C.3-3</td></tr>
<tr><td>15.</td><td>Part A: 0.2 inches or equivalent
Part B: $y = 48 - 0.2x$ or equivalent</td><td>8.F.4</td></tr>
<tr><td>16.</td><td>Part A: 147 cubic inches
Part B: 49 cubic inches
Part C: 6 inches or 7 inches
Part D: 1 inch or 2 inches</td><td>8.G.9</td></tr>
<tr><td>17.</td><td>A, C, E</td><td>8.SP.4</td></tr>
</table>

18.		8.G.8
19.	1.25	8.EE.5-2
20.	Part A: See Rubric Part B: See Rubric	8.D.2
21.	Part A: $s = 8 + t$ or equivalent and $10s + 15t = 305$ or equivalent 17 small chairs and 9 large chairs, or correct values based on incorrect system of equations Part B: B Part C: Number of small chairs: 14 Number of large chairs: 4	8.EE.8c
22.	B, F	8.F.2

#14 Rubric	
Score	**Description**

3	Student response includes the following 3 elements.
	
	• **Reasoning component** = 3 points
	  ○ The component has 3 parts, each worth 1 point.
	
	Part 1: The student explains why the sum of the measures of angles 4 and 5 is 180 degrees. For example: "The angles 4 and 5 are on the same side of a transversal that cuts two parallel lines. Therefore, sum of the measures of angle 5 and angle 4 is 180 degrees."
	
	Note:
	• The student must use correct mathematical language (e.g. "same side interior angles") in his or her reasoning to receive the point for this part.
	
	Part 2: The student explains why the sum of the measures of angles 9 and 10 is 180 degrees. For example: "The angles 9 and 10 form a straight line. Therefore, the sum of the measures of angle 10 and angle 9 is 180 degrees."
	
	Note:
	• The student must use correct mathematical language (e.g. "linear pair") in his or her reasoning to receive the point for this part.
	
	Part 3: The student explains that since the sum of the measures of angles 4 and 5 is 180 degrees, and that the sum of the measures of angles 9 and 10 is 180 degrees, then $m\angle 4 + m\angle 5 = m\angle 10 + m\angle 9$.
	
	Note:
	• If a student provides only the following equations, the total points earned would not be greater than 1 point.
	  $m\angle 4 + m\angle 5 = 180^{o}$
	  $m\angle 10 + m\angle 9 = 180^{o}$
	  so
	  $m\angle 4 + m\angle 5 = m\angle 10 + m\angle 9$

2	Student response includes 2 of the above elements.
1	Student response includes 1 of the above elements.
0	Student response is incorrect or irrelevant.

#20 Rubric Part A	
Score	**Description**
2	Student response includes the following 2 elements. • Correct commission for June • Correct hourly wage Sample Student Response: Commission: $0.04 \times 8{,}625.00 = 345.00$ Wages not from commission: $1005 - 345 = 660$ Hourly wage: $\frac{660}{60} = \$11.00$ per hour
1	Student response includes 1 of the above elements.
0	Student response is incorrect or irrelevant.

#20 Rubric Part B	
Score	**Description**
4	Student response includes each of the following 4 elements. • Shows amount saved in June, July, and August and amount she still needs to save • Shows correct base salary for September and amount she still needs in commission • Shows correct amount of sales she needs in September. • Correct work or explanation Sample Student Response: Jennifer saved 1,025 June, July, and August. $(1005 - 600) + (884 - 600) + (936 - 600) = 1025$ She still needs to save \$475. $1500 - 1025 = 475$ The base salary for September is \$880. $80 \times 11 - 600 = 280$ She still needs to make \$195 in commission. $475 - 280 = 195$ The minimum amount of sales to earn \$195 is \$4,875. $195 \div 0.04 = 4875$ Or The minimum amount of sales is \$4,875.

	$\frac{\left(1500-\left[(1005-600)+(884-600)+(936-600)+(80\times 11-600)\right]\right)}{0.04}$ Note: Responses that use valid strategies to determine the minimum amount of sales needed in September to meet the goal of saving at least $1,500 that do not match the example provided in the Rubric will be evaluated as follows: • Responses which provide a valid strategy with complete and correct work or explanation will earn a score of 4. • Responses which provide a valid strategy with mostly complete work or explanation **OR** complete work or explanation with only 1 minor calculation error will earn a score of 3. • Responses which provide a valid strategy with incomplete work or explanation and/or multiple calculation errors will earn a score of 2 **OR** a complete strategy and work with a conceptual flaw. • Responses which provide an incomplete strategy and work or explanation which demonstrate sufficient understanding beyond the basic information provided in the prompt will earn a score of 1.
3	Student response includes 3 of the above elements.
2	Student response includes 2 of the above elements.
1	Student response includes 1 of the above elements.
0	Student response is incorrect or irrelevant.