



The following pages include the answer key for all machine-scored items, followed by a sample response for the hand-scored item.

- The rubrics show sample student responses. Student responses other than that shown in the rubric may earn full or partial credit.
- Which responses to hand-scored items receive full or partial credit will be confirmed during range-finding (reviewing sets of real student work)
- If students make a computation error, they can still earn points for reasoning or modeling.

Item Number	Answer Key
1.	Student response is 7.5.
2.	Student response is $p \geq 25$.
3.	D, E, B
4.	Student response is 4.
5.	B
6.	D
7.	Bar Graph: The values of the editable bars going from left to right should be 3, 5, 2.
8.	Student response is 22.
9.	Student response is (-7,6).
10.	Student response is 5.
11.	Student response is 214.
12.	Student response is 215.
13.	Student response is a point plotted at (-4, 3).
14.	Part A: 24 Part B: 30
15.	C, B, A
16.	See Rubric



17.	Part A: Student response is $20 = 0.25 \times n$. Part B: Student response is 45%.
18.	Drop Down 1: 34 Drop Down 2: 14
19.	Student response is 7.5.
20.	Part A: Student response is $55.5x=277.5$. Part B: Student response is 5.
21.	See Rubric
22.	Part A: Student responses are 3 in gap1, 1 in gap2, 2 in gap3, 6 in gap4, 4 in gap5, and 5 in gap6. Part B: Student responses are + in gap1 and 3 in gap2.
23.	See Rubric
24.	See Rubric
25.	See Rubric
26.	Student response is 2 pints = 4 cups, 2 quarts = 8 cups.
27.	1. Triangular pyramid 2. Square pyramid 3. Triangular prism 4. Rectangular prism
28.	Student response is 8.
29.	See Rubric



#16 Rubric

Score	Description
3	<p>Student response includes the following elements.</p> <ul style="list-style-type: none">• Reasoning component 1 = 1 point: Valid explanation for finding Maya's hiking rate.• Computation component = 1 point: Correct value for the total number of hours Maya hikes to complete the trail• Reasoning/Modeling component = 1 point: Valid explanation for how to use reasoned estimates to check the work. <p>Sample Student Response:</p> <p>Maya has hiked 4 miles in 2 hours, which is a rate of $4 \text{ miles} \div 2 \text{ hours}$, or 2 miles per hour. It will take Maya 4.5 hours total to complete the trail.</p> <p>Maya has hiked 4 miles in 2 hours. She has 5 more miles to hike. It will take Maya slightly longer to hike 5 more miles than it took her to hike 4 miles. A reasonable estimate is that it will take Maya 3 hours to hike 5 more miles. So, a reasonable estimate is that it will take Maya 2 hours + 3 hours, or 5 total hours, to complete the trail. The estimate of 5 hours is close to the answer of 4.5 hours.</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.



#21 Rubric

3 Point Constructed Response Rubric – Part A

Score	Description
3	<p>Student response includes the following elements.</p> <ul style="list-style-type: none">• Modeling component = 1 point: Correct expression to find the volume of the box of cereal• Computation component = 1 point: Correct volume of the box of cereal• Computation component = 1 point: Correct cost for shipping each cubic inch of the box of cereal with work shown <p>Sample Student Response: The box of cereal is in the shape of a rectangular prism. To find the volume of a rectangular prism, multiply the length by the width by the height. So, an expression to find the volume of the box of cereal is $8 \times 2 \times 12$.</p> <p>The volume of the box of cereal is $8 \times 2 \times 12 = 192$ cubic inches.</p> <p>Divide the cost to ship the box of cereal by the volume of the box of cereal. The cost for shipping each cubic inch of the box of cereal is $\\$5.76 \div 192 = \\0.03 per cubic inch.</p> <p>Or other valid approaches are acceptable.</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.

3 Point Constructed Response Rubric – Part B

Score	Description
3	<p>Student response includes the following elements.</p> <ul style="list-style-type: none">• Modeling component = 1 point: Correct expression to find the number of 1/4-cup servings of cereal there are in the box of cereal• Modeling component = 1 point: Correct description of how to use a model to find the



	<p>number of 1/4-cup servings of cereal there are in the box of cereal</p> <ul style="list-style-type: none"> Computation component = 1 point: Correct description of how to use the relationship between multiplication and division to find the number of 1/4-cup servings of cereal there are in the box of cereal <p>Sample Student Response: To find the number of 1/4-cup servings of cereal there are in the box of cereal, divide the number of cups of cereal by the amount of one serving: $6 \div 1/4$.</p> <p>Draw a model with 6 equal parts to represent the 6 cups of cereal. Divide each part into 4 equal parts to represent a serving size of 1/4 cup. The model shows 24 equal parts, so there are twenty-four 1/4-cup servings of cereal in the box of cereal.</p> <p>$6 \div 1/4 = 24$ because $24 \times 1/4 = 6$, so there are twenty-four 1/4-cup servings of cereal in the box of cereal.</p> <p>Or other valid approaches are acceptable.</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.

#23 Rubric

Score	Description
3	<p>Student response includes the following elements.</p> <ul style="list-style-type: none"> Computation component = 1 point: Correct value of the expression $-2(x - 5)$ when $x = 3$ Computation component = 1 point: Correct value of the expression $10 - 2x$ when $x = 3$ Modeling component = 1 point: Shows why the expressions $-2(x - 5)$ and $10 - 2x$ are equivalent <p>Sample Student Response: When $x = 3$, $-2(x - 5) = -2(3 - 5) = -2(-2) = 4$.</p> <p>When $x = 3$, $10 - 2x = 10 - 2(3) = 10 - 6 = 4$.</p> <p>The expressions $-2(x - 5)$ and $10 - 2x$ are equivalent because when $x = 3$, or when $x = \text{any}$</p>



	value, the expressions have the same value. (In other words, $-2(x - 5)$ and $10 - 2x$ are equivalent because $-2(x-5) = -2x + 10 = 10 - 2x$.) Or other valid approaches are acceptable.
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.

#24 Rubric

Score	Description
3	Student response includes the following elements. <ul style="list-style-type: none">• Modeling component = 1 point: Valid explanation or work shown for determining how many miles Samantha and Jake each rode their bike.• Modeling component = 1 point: Valid explanation or work shown for determining how much farther Samantha biked.• Computation component = 1 point: Correct value for the number of miles, 8 Sample Student Response: $12 \times 4 = 48$ $10 \times 4 = 40$ $48 - 40 = 8$ $12 \times 4 = 48$ $10 \times 4 = 40$ $48 - 40 = 8$ Or other valid approaches are acceptable.
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.



#25 Rubric

Score	Description
3	<p>Student response includes the following elements.</p> <ul style="list-style-type: none">• Modeling component = 1 point: Correct expression to find the number of 1/8-cup servings of raisins that are in 1/2 cup of raisins• Modeling component = 1 point: Correct description of how the model can be modified to show how many 1/8-cup servings of raisins are in 1/2 cup of raisins• Computation component = 1 point: Finds the correct number of 1/8-cup servings of raisins in 1/2 cup of raisins using the relationship between multiplication and division <p>Sample Student Response: Divide the total amount of raisins by the amount of raisins in one serving. So, to find the number of 1/8-cup servings of raisins that are in 1/2 cup of raisins use the expression $(1/2) \div (1/8)$.</p> <p>The diagram shows the 1/2 cup of raisins that Jamie has. Divide it into 8 equal parts so that each part represents a 1/8-cup serving. The diagram would show 4 of 8 parts shaded, which means there are four 1/8-cup servings of raisins in 1/2 cup of raisins.</p> <p>There are four 1/8-cup servings of raisins in 1/2 cup of raisins because $(1/2) \div (1/8) = 4$ since $1/8 \times 4$ is 1/2.</p> <p>Or other valid approaches are acceptable.</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.



#29 Rubric

2 Point Constructed Response Rubric – Part A

Score	Description
2	<p>Student response includes the following elements.</p> <ul style="list-style-type: none">• Reasoning component = 1 point: Explains how to determine the distance from Paige's house to the school using absolute value• Computation component = 1 point: Correct distance from Paige's house to the school <p>Sample Student Response: Paige's house is located at $(-4, -1)$ and the school is located at $(2, -1)$. Since the y-coordinates are the same and the x-coordinates are opposites, find the sum of the absolute value of the x-coordinates. So, the distance from Paige's house to the school is $-4 + 2 = 4 + 2 = 6$ miles.</p> <p>Or other valid approaches are acceptable.</p>
1	Student response includes 1 of the 2 elements.
0	Student response is incorrect or irrelevant.

2 Point Constructed Response Rubric – Part B

Score	Description
2	<p>Student response includes the following elements.</p> <ul style="list-style-type: none">• Reasoning component = 1 point: Explains how to determine the distance from the school to the library using absolute value• Computation component = 1 point: Correct distance from the school to the library <p>Sample Student Response: The school is located at $(2, -1)$ and the library is located at $(2, -4)$. Since the x-coordinates are the same and the y-coordinates are not opposites, find the difference of the absolute value of the y-coordinates. So, the distance from the school to the library is $-4 - -1 = 4 - 1 = 3$ miles.</p> <p>Or other valid approaches are acceptable.</p>



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Assessment of Readiness

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