Computer-Based Sample Test Scoring Guide
Grade 6 Math

Updated January 2019

Prepared by the Arizona Department of Education and the American Institutes for Research®
About the Sample Test Scoring Guide

The AzMERIT Sample Test Scoring Guides provide details about the items, student response types, correct responses, and related scoring considerations for AzMERIT Sample Test items.

Within this guide, each item is presented with the following information:

- Item number
- Cluster
- Content Standard
- Depth of Knowledge (DOK)
- Static presentation of the item
- Static presentation of student response field (when appropriate)
- Answer key, rubric or exemplar
- Applicable score point(s) for each item

The items included in this guide are representative of the kinds of items that students can expect to experience when taking the computer-based test for AzMERIT Grade 6 Math.
Grade 6 Math Sample Test

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Cluster</th>
<th>Content Standard</th>
<th>DOK</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>6.EE.A</td>
<td>6.EE.A.2</td>
<td>2</td>
</tr>
</tbody>
</table>

An expression is shown.

$$\frac{1}{2}b^2 - 6$$

What is the value of the expression when \( b = 4 \)?

2

(1 Point) Student entered 2 or any equivalent value.
Select all of the expressions that are equivalent to $3.1^4$.

- $(3.1)(3.1)(3.1)(3.1)$
- $(9.61)(3.1)(3.1)$
- $(3.1)(3.1)(2)$
- $(9.61)(9.61)$
- $(3.1)(4)$

(1 Point) Student selected the three correct expressions.
Sample Test Scoring Guide - Grade 6 Math
Spring 2019

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<tr>
<td>3</td>
<td>6.RP.A</td>
<td>6.RP.A.2</td>
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</tr>
</tbody>
</table>

A school earns $70 from selling 50 tickets for the school play. Each ticket costs the same price.

How much does the school earn for 1 ticket?

$1.40

(1 Point) Student entered 1.40 or any equivalent value.
Sarah types a 3-page report in 30 minutes, and each page has 400 words. What is Sarah’s typing rate, in words per minute?

40

(1 Point) Student entered 40 or any equivalent value.
Lee records the height of players on a basketball team, and calculates the mean absolute deviation of the set of data. What does the mean absolute deviation of the set of data describe?

A. the average height of a player on the team  
B. the height of the tallest player on the team  
C. the difference in height between the shortest and tallest player  
D. the average difference in height between each player and the mean height

(1 point) Student selected the correct option.
Sample Test Scoring Guide - Grade 6 Math
Spring 2019

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<td>6.EE.A</td>
<td>6.EE.A.4</td>
<td>2</td>
</tr>
</tbody>
</table>

Match all the equivalent expressions.

<table>
<thead>
<tr>
<th></th>
<th>$6x - 3$</th>
<th>$6x - 5$</th>
<th>$6x - 6$</th>
<th>$6x - 9$</th>
<th>$6x - 18$</th>
</tr>
</thead>
<tbody>
<tr>
<td>$6(x - 3)$</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>✓</td>
</tr>
<tr>
<td>$2(3x - 3)$</td>
<td>□</td>
<td>□</td>
<td>✓</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

(1 point) Student selected the correct equivalent expressions.
Which statement is true about the points represented by (1, -3) and (2, 3)?

A. The points are located above the x-axis.
B. The points can be connected by a vertical line.
C. The points are the same distance from the x-axis.
D. The points are the same distance from the y-axis.

(1 Point) Student selected the correct option.
An expression is shown.

12.395 – (2.24 • 3.9)

What is the value of the expression?

3.659

(1 point) Student entered 3.659 or any equivalent value.
An expression is shown.

7525 ÷ 35

What is the value of the expression?

215

(1 point) Student entered 215 or any equivalent value.
Use the Connect Line tool to create a rectangle with an area of 35 square units and one side with vertices at (1, 3) and (1, -4).

(1 Point) Student created a correct rectangle.
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</tr>
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<tbody>
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<td>6.RP.A</td>
<td>6.RP.A.3</td>
<td>2</td>
</tr>
</tbody>
</table>

On Monday, the theater club sells 14 tickets for the school play. On Tuesday, they sell 10 tickets. On those two days, they sell 32% of the total number of tickets.

What is the total number of tickets?

(1 point) Student entered 75 or any equivalent value.
A rectangular flag has a width of $\frac{2}{3}$ feet and an area of $\frac{3}{4}$ square feet. Which expression could be used to calculate the length, in feet, of the rectangle?

- A $\frac{2}{3} \div \frac{3}{4}$
- B $\frac{3}{4} \div \frac{2}{3}$
- C $\frac{2}{3} \times \frac{3}{4}$
- D $\frac{3}{4} \times \frac{2}{3}$

(1 point) Student selected the correct option.
Charlie uses the expression $2x + 2x$ to represent the perimeter of a square.

What does the variable $x$ represent in this expression?

- **A** the area
- **B** the perimeter
- **C** the side length
- **D** the sum of 2 side lengths

*(1 point) Student selected the correct option.*
A storage container is shown, with measurements in feet (ft).

What is the volume, in cubic feet, of the storage container?

5

(1 point) Student entered 5 or any equivalent value.
Kaden works 5 days.

- The median number of hours he works is 3.
- The mean number of hours he works is 4.

Complete the table to show a possible number of hours that Kaden works on each of the 5 days.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>1</td>
</tr>
<tr>
<td>Tuesday</td>
<td>2</td>
</tr>
<tr>
<td>Wednesday</td>
<td>3</td>
</tr>
<tr>
<td>Thursday</td>
<td>6</td>
</tr>
<tr>
<td>Friday</td>
<td>8</td>
</tr>
</tbody>
</table>

**(1 point)** Student completed the table with all correct values.
The total number of hours, \( t \), that Trent has practiced his guitar after \( d \) days is modeled by the equation shown.

\[ t = 3d \]

Complete the table to describe this relationship.

<table>
<thead>
<tr>
<th>( d )</th>
<th>( t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

(1 point) Student completed the table with all correct values.
Casey has a total of 18 pens. Twelve of these pens are blue, and the rest are red.

What is the ratio of blue pens to red pens?

A 1:2
B 2:1
C 2:3
D 3:2

(1 Point) Student selected the correct option.
An airplane travels a total distance of 5,585 kilometers on a trip. It travels 563 kilometers in the first 40 minutes of the trip. The airplane travels at an average speed of 837 kilometers per hour for the rest of the trip.

How long does it take for the airplane to complete the entire trip?

A 5 hours 56 minutes

B 6 hours 00 minutes

C 6 hours 37 minutes

D 6 hours 40 minutes

**1 point** Student selected the correct option.
The net of a square pyramid is shown.

Create an expression that represents the surface area, in square centimeters (cm), of the square pyramid.

\[ 4 \times \left( \frac{5x}{2} \right) + x^2 \]

(1 point) Student entered \( 4 \times \left( \frac{5x}{2} \right) + x^2 \) or any equivalent expression.
A butcher displays the cost, in dollars, of different amounts of meat in the table shown.

<table>
<thead>
<tr>
<th>Amount of Meat (pounds)</th>
<th>Cost (dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>49</td>
</tr>
</tbody>
</table>

Create an equation that can be used to find the cost, $c$, for $p$ pounds of meat.

$$c = 7p$$

(1 point) Student entered $c = 7p$ or any equivalent equation.
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<tr>
<td>21</td>
<td>6.EE.B</td>
<td>6.EE.B.8</td>
<td>2</td>
</tr>
</tbody>
</table>

The number line shows all of the possible values of $m$.

Create an inequality that represents all of the possible values of $m$.

$m > 2$

(1 Point) Student entered $m > 2$ or any equivalent inequality.
An inequality is shown.

\[2x - 5 < 33\]

Select all the values that are solutions to this inequality.

- [ ] 28
- [ ] 26
- [ ] 19
- [ ] 18
- [✓] 12

(1 point) Student selected the two correct values.
Which statement about the comparison of \( | -3.2| \) and \( |2| \) is accurate?

- **A** \(|-3.2|\) is less than \(|2|\) because \(-3.2\) is a negative number.
- **B** \(|-3.2|\) is greater than \(|2|\) because \(-3.2\) is a greater distance from 0.
- **C** \(|-3.2|\) is less than \(|2|\) because the distance between the values on the number line is greater than \(|-3.2|\).
- **D** \(|-3.2|\) is greater than \(|2|\) because the distance between the values on the number line is smaller than \(|-3.2|\).

**1 point** Student selected the correct option.
It takes 4 hours to paint 15 doors at the factory.
At this rate, how many hours will it take to paint 90 doors?

(1 point) Student entered 24 or any equivalent value.
Holtville, California has an elevation of – 10 feet, and Galveston, Texas has an elevation of 7 feet.

Select the words that correctly complete the sentence.

Holtville is below sea level, and Galveston is above sea level.

(1 point) Student selected “below” from first dropdown, and “above” from second dropdown.