



Computer-Based Sample Test Scoring Guide Grade 4 Math AzMERIT

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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
- Domain
- Cluster
- Content Standard
- Math Practices
- 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 4 Math.

Grade 4 Math Sample Test

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
1	NOF	4.NF.C	4.NF.C.5	2, 4, 5, 7	2

An expression is shown.

$$\frac{5}{10} + \frac{13}{100}$$

What is the value of the expression?

$$\frac{63}{100}$$



1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

(1 Point) Student entered $\frac{63}{100}$ or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
2	OAT	4.OA.B	4.OA.B.4	2, 7	1

Select all of the factors that 14 and 24 have in common.

- 1
- 2
- 3
- 7
- 14
- 24

(1 Point) Student selected the two correct options.

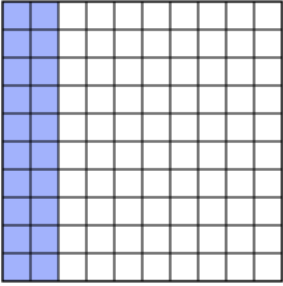
Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
3	NOF	4.NF.C	4.NF.C.7	2, 4, 5, 7	2

A decimal model is shown.

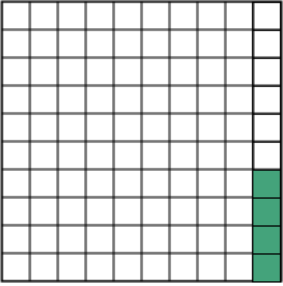
A. Click on the grid on the right to create a decimal model that shows 0.04.

B. Click on the correct symbol to compare the two decimals.

0.2



0.04



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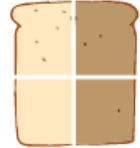

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(1 Point) Student created a correct fraction model and a correct comparison. Any model with 4 shaded blocks accepted.

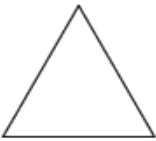
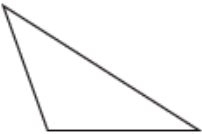



Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
4	NOF	4.NF.A	4.NF.A.2	2, 4, 5, 7	3

Kelly's sandwich	Lucy's sandwich	Kelly and Lucy have two different-sized sandwiches, as shown.
		<ul style="list-style-type: none">• Kelly ate $\frac{2}{4}$ of her sandwich.• Lucy ate $\frac{3}{6}$ of her sandwich.
Kelly says that each girl ate the same amount of sandwich. Lucy disagrees.		
Who statement is true?		
<ul style="list-style-type: none">Ⓐ Kelly is not correct because $\frac{3}{6}$ is greater than $\frac{2}{4}$.Ⓑ Lucy is not correct because $\frac{2}{4}$ is greater than $\frac{3}{6}$.Ⓒ Kelly is correct because they each ate half of a sandwich.● Lucy is correct because they each ate half of different-sized sandwiches.		

(1 Point)

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
5	MDG	4.G.A	4.G.A.1	5, 6	1

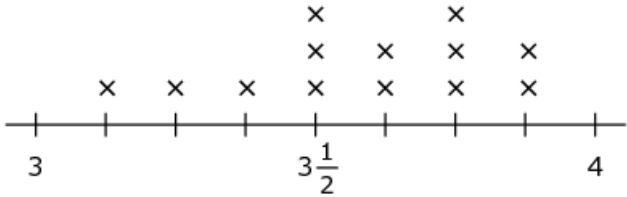
Select all of the shapes that do **not** have an obtuse angle.

- 
- 
- 
- 
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(1 point) Student selected the two correct shapes.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
6	MDG	4.MD.B	4.MD.B.4	2, 4, 5, 6, 7	2

A line plot with data for the heights of plants is shown.



Heights of Plants (inches)

What is the difference, in inches, between the tallest and shortest plants?

$\frac{6}{8}$

← → ↶ ↷ ✖

1	2	3	
4	5	6	
7	8	9	
0	.	$\frac{\square}{\square}$	

(1 point) Student entered $\frac{6}{8}$ or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
7	NOF	4.NF.B	4.NF.B.3b	1, 2, 4, 5, 6, 7, 8	2

Select all of the expressions that have a value of $\frac{9}{8}$.

- $1 + \frac{1}{8}$
- $1 + \frac{9}{8}$
- $\frac{3}{8} + \frac{3}{8} + \frac{3}{8}$
- $\frac{1}{8} + \frac{2}{8} + \frac{3}{8} + \frac{4}{8}$
- $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$

(1 Point) Student selected the three correct expressions.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
8	OAT	4.OA.A	4.OA.A.2	2, 4, 5, 7	2

Sami has 6 times as many books as Jeff.

Complete the table to show three different possible amounts of books Sami and Jeff could have.

Sami's Books	Jeff's Books
12	2
24	4
18	3

(1 point) Student completed the table with all correct values. Any pair of numbers in the third row where Sami has 6 times as many books as Jeff, inclusive, but all rows must be different.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
9	NBT	4.NBT.A	4.NBT.A.1	5, 7, 8	1

An equation is shown.

$$4000 \div \square = 400$$

What is the value of the missing number?

10

A digital calculator interface is shown below the input field. It features a row of navigation buttons: a left arrow, a right arrow, a circular arrow (undo), a square arrow (redo), and a square with an 'X' (clear). Below these buttons is a numeric keypad with buttons for digits 1 through 9, 0, a decimal point, and a fraction template button (represented by a square with a horizontal line and two smaller squares above and below it).

(1 point) Student entered 10 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
10	NOF	4.NF.A	4.NF.A.1	2, 4, 7, 8	3

Two models are shown. Each model has been shaded gray to represent a fraction.

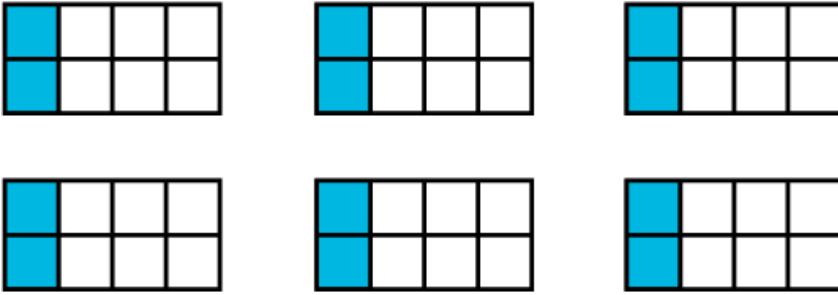
Which statement is true about the fractions $\frac{3}{4}$ and $\frac{6}{8}$?

- (A) They are equivalent because each model is divided into equal parts.
- (B) They are not equivalent because the number of shaded parts in each model is different.
- (C) They are equivalent because the size of the areas shaded gray in both models is the same.
- (D) They are not equivalent because the models are divided into different numbers of equal parts.

(1 Point)

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
11	NOF	4.NF.B	4.NF.B.4a	1, 2, 4, 5, 6, 7, 8	2

A fraction model is shown, where each large rectangle represents one whole.



Which expression models the shaded region?

- Ⓐ $\frac{2}{8} + 6$
- Ⓑ $48 - 12$
- Ⓒ $\frac{2}{8} \times 6$
- Ⓓ $48 \div 6$

(1 point)

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
12	NBT	4.NBT.B	4.NBT.B.6	2, 3, 4, 5, 7	2

What is the value of $1932 \div 4$? Enter your answer as a whole number.

483

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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

(1 point) Student entered 483 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
13	OAT	4.OA.A	4.OA.A.3	1, 2, 4, 5, 6, 7	3

Tina is buying lunch. She pays for 3 drinks and 3 pieces of pizza with a \$20 bill. The price for a piece of pizza is \$3. She receives \$5 in change.

What was the total cost of the 3 drinks?

\$ 6

A digital math input interface. At the top, there is a row of five navigation buttons: left arrow, right arrow, undo, redo, and clear (X). Below this is a grid of input buttons. The grid has four rows and three columns. The first row contains buttons for digits 1, 2, and 3. The second row contains buttons for digits 4, 5, and 6. The third row contains buttons for digits 7, 8, and 9. The fourth row contains buttons for digit 0, a decimal point, and a fraction template icon (a square with a horizontal line and two smaller squares above and below).

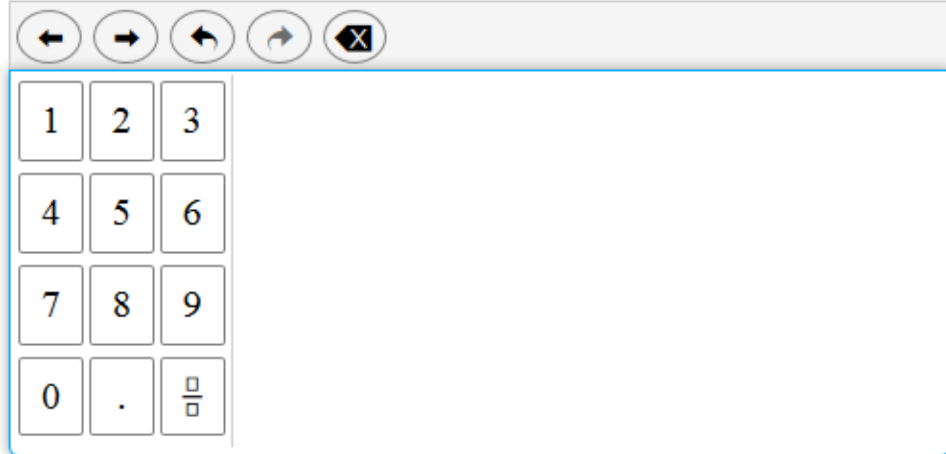
(1 point) Student entered 6 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
14	NBT	4.NBT.B	4.NBT.B.4	2, 5, 7, 8	2

A digit is missing in the addition problem shown.

$$\begin{array}{r} 11,\square 69 \\ 12,392 \\ + 24,921 \\ \hline 48,582 \end{array}$$

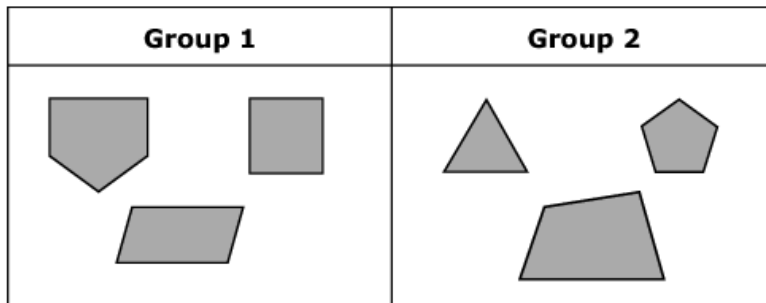
What is the missing digit?



(1 point) Student entered the correct digit.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
15	MDG	4.G.A	4.G.A.2	1, 2, 4, 7	3

Two groups of shapes are shown.



Explain what property the shapes in Group 1 have that the shapes in Group 2 do not.

Type your answer in the space provided.

Group 1 has parallel sides.

(1 point) Student response included one or more of the following:

- Group 1 has parallel sides.
- Group 2 doesn't have parallel sides.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
16	NBT	4.NBT.B	4.NBT.B.6	2, 3, 4, 5, 7	2

Select all the expressions that have a value of 50.

- $600 \div 5$
- $500 \div 1$
- $400 \div 8$
- $300 \div 7$
- $200 \div 4$

(1 point) Student selected the two correct expressions.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
17	NOF	4.NF.A	4.NF.A.2	2, 4, 5, 7	3

Mr. Garcia asks his students to find a fraction that meets these conditions.

- The fraction is greater than $\frac{1}{2}$.
- The fraction is less than $\frac{4}{5}$.

Create a fraction that meets Mr. Garcia's conditions.

$$\frac{7}{10}$$

←
→
↶
↷
✖

1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

(1 Point) Student entered $\frac{7}{10}$ or any fraction greater than $\frac{1}{2}$ and less than $\frac{4}{5}$.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
18	NOF	4.NF.A	4.NF.A.2	2, 4, 5, 7	3

A group of friends eats **part** of a blueberry pie and **part** of a cherry pie. The two pies are the same size.

The amount of blueberry pie that is left is **less** than the amount of cherry pie that is left.

A. Click to show the possible remaining amount of each pie.

B. Drag numbers to the boxes and click on a symbol below the circle to create a comparison of the two fraction models.

0

1

2

3

4

5

6

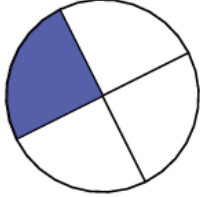
7

8

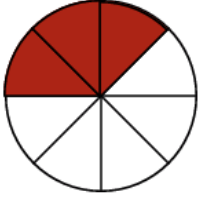
9

A.

Blueberry Pie



Cherry Pie



B.

1

4

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3

8

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(1 point) Student created two correct fraction models and a comparison that correctly models the two fractions.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
19	NBT	4.NBT.A	4.NBT.A.3	2, 6	1

Click in the table to show which place each number was rounded to.

	Nearest 100	Nearest 1,000	Nearest 10,000
4,567 → 5,000	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10,579 → 11,000	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12,362 → 10,000	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
14,258 → 14,300	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(1 point) Student selected the correct rounding category for each example.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
20	NBT	4.NBT.B	4.NBT.B.5	2, 3, 4, 5, 7	2

What is the product of 4 and 2956?

11824

The image shows a digital math input interface. At the top, there is a text input field containing the number "11824". Below this field is a toolbar with five icons: a left arrow, a right arrow, a left arrow with a curved tail, a right arrow with a curved tail, and a square with an 'X' (clear). Below the toolbar is a grid of buttons for numbers and symbols. The grid is organized as follows:

1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

(1 point) Student 11824 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
21	OAT	4.OA.C	4.OA.C.5	2, 4, 5, 7	2

A pattern starts with the number 12. The pattern follows the rule "Multiply by 2 and then subtract 9."

Complete the table to show the missing numbers in the pattern.

First Number	Second Number	Third Number
12	15	21

(1 Point) Student completed the table with two correct values.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
22	NOF	4.NF.B	4.NF.B.3d	1, 2, 4, 5, 6, 7, 8	2

Some friends buy a cake. Sam eats $\frac{2}{10}$ of the cake. Julie eats $\frac{3}{10}$ of the cake. Tyler eats $\frac{4}{10}$ of the cake.

How much of the cake is left?

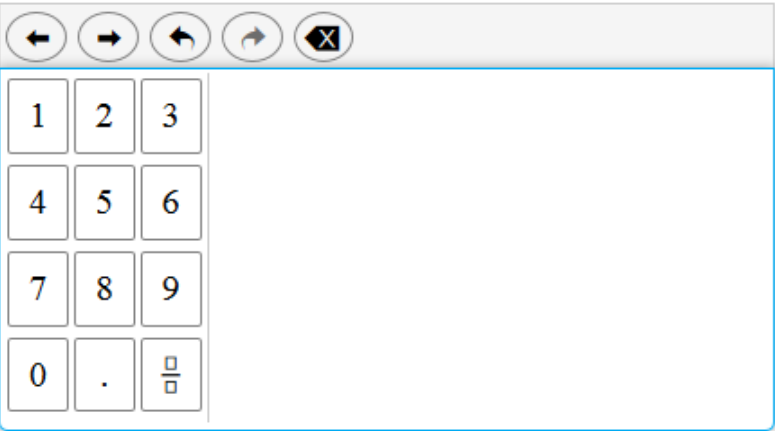
- Ⓐ $\frac{1}{1}$
- Ⓑ $\frac{1}{10}$
- Ⓒ $\frac{9}{10}$
- Ⓓ $\frac{9}{30}$

(1 point)

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
23	MDG	4.MD.A	4.MD.A.1	2, 5, 6	2

Joe measures his height. He is 5 feet tall.
What is Joe's height in inches?

60



(1 point) Student entered 60 or any equivalent value.

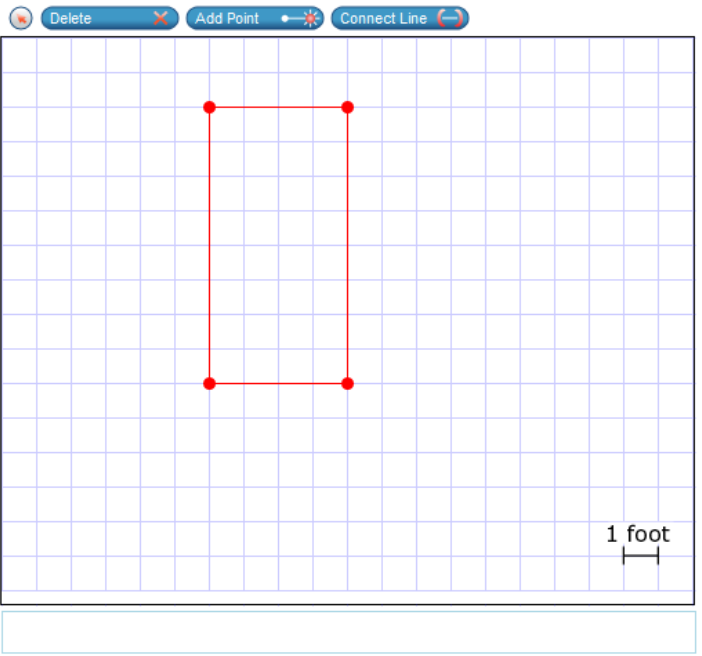
Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
24	MDG	4.MD.A	4.MD.A.3	2, 4, 5, 6, 7	3

Kalli's family is planning a sandbox for their backyard.

The sandbox must have

- a rectangular shape.
- a length of 8 feet.
- a perimeter greater than 20 and less than 30 feet.

Use the Connect Line tool to draw a possible plan for the sandbox.



(1 point) Student created a correct rectangle with a length of 8 feet and a perimeter between 20 and 30 feet.