



# Computer-Based Sample Test Scoring Guide Grade 5 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:

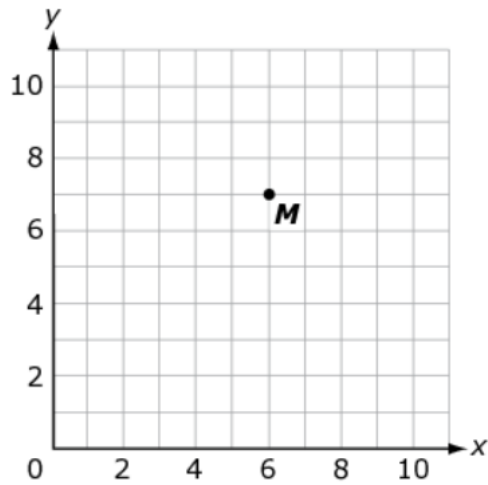
- Item number
- Domain
- Cluster
- Content Standard
- Math Practices
- Depth of Knowledge (DOK)
- Static presentation of the item
- Static presentation of student response field (when appropriate)
- Answer key, rubric or exemplar
- Applicable score point(s) for each item

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 5 Math. Sample Item graphic (not MC) with metadata labeled.

## Grade 5 Math Sample Test

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
1	MDG	5.G.A	5.G.A.1	4, 6, 7	1

Point  $M$  is located at  $(6, 7)$  on the coordinate plane. Point  $N$  is located 5 units to the left and 2 units down from point  $M$ .



What are the coordinates of point  $N$ ?

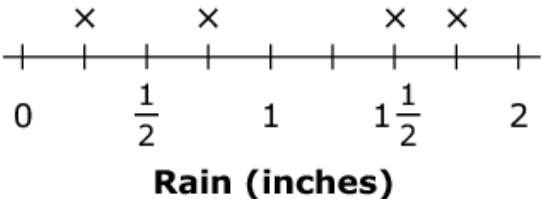
- (1, 5)
- (4, 2)
- (8, 12)
- (11, 9)

**(1 Point)**

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
2	MDG	5.MD.B	5.MD.B.2	1, 2, 4, 5, 6, 7	3

Kyle records the rainfall, in inches, for four days and records his data on the line plot.

**Rainfall**



Kyle then records the rainfall for a fifth day. The total rainfall for all five days is  $5\frac{1}{2}$  inches.

What was the rainfall, in inches, on the fifth day?

1.25

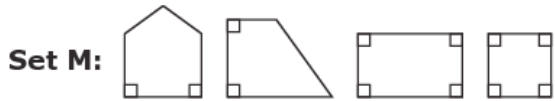
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1	2	3
4	5	6
7	8	9
0	.	$\frac{\square}{\square}$

**(1 Point)** Student entered 1.25 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
3	MDG	5.G.B	5.G.B.3	2, 3, 5, 6, 7	3

Two sets of shapes are shown.



- All the shapes in Set M have at least two 90-degree angles and one pair of parallel sides.
- All the shapes in Set N have at least two pairs of sides with equal lengths and two pairs of parallel sides.

Select all the statements that must be true.

- Every shape in Set M has at least one right angle.
- Every shape in Set M is a parallelogram.
- There appear to be two parallelograms in Set N.
- There is one rhombus in Set N.
- Every shape in Set N is a quadrilateral.

**(1 Point)** Student selected the three correct statements.

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

Chandni has 3 pieces of orange yarn that are 1.25 feet long each and 2 pieces of blue yarn that are 2.75 feet long each. She uses all 5 pieces of yarn for an art project.

What is the total length of yarn, in feet, that Chandni uses for her art project?

9.25



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

**(1 Point)** Student entered 9.25 or any equivalent value.

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

Anthony completed  $\frac{3}{4}$  of his homework questions. After completing a few more, Anthony claims that he has now completed  $\frac{5}{9}$  of his homework questions.

Which statement explains why Anthony's claim is incorrect?

- A 3 is less than 5.
- B  $\frac{3}{4}$  is greater than  $\frac{5}{9}$ .
- C 9 is not a multiple of 4.
- D  $\frac{5}{9}$  is not a multiple of  $\frac{3}{4}$ .

**(1 point)**

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
6	NOAT	5.OA.A	5.OA.A.1	1, 5, 8	3

Matthew evaluated the following expression, as shown.

$$\frac{4}{5} \times (12 \div 2 + 4) - 1$$

Step 1:  $\frac{4}{5} \times (6 + 4) - 1$

Step 2:  $\frac{4}{5} \times 10 - 1$

Step 3:  $\frac{4}{5} \times 9$

Step 4:  $7\frac{1}{5}$

Which step shows Matthew's first mistake?

- A Step 1
- B Step 2
- C Step 3
- D Step 4

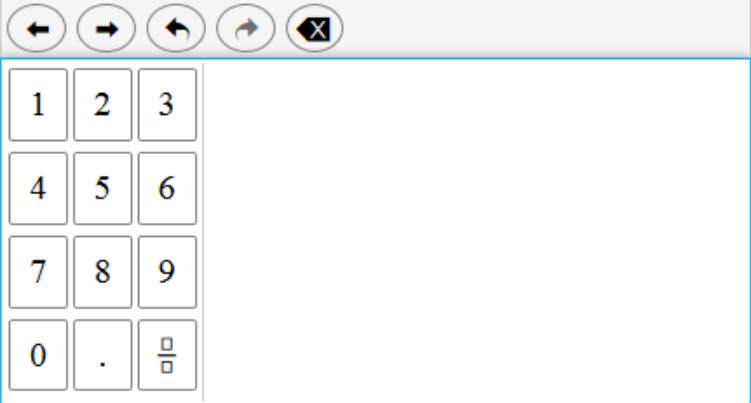
**(1 point)**



Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
7	NOAT	5.NBT.A	5.NBT.A.2	2, 6, 7	2

What is  $0.4582 \times 10^3$ ?

458.2



**(1 Point)** Student entered 458.2 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
8	NOAT	5.OA.B	5.OA.B.3	2, 7	2

Joshua and Kiara are creating number patterns.

- Joshua’s pattern starts at 1 and follows the rule “Multiply by 2, then add 1.”
- Kiara’s pattern starts at 11 and follows the rule “Add 5.”

What is the first number that is the same in both patterns?

31

A digital calculator interface with a grey header bar containing navigation buttons: left arrow, right arrow, undo, redo, and clear (X). Below the header is a numeric keypad with buttons for digits 1-9, 0, a decimal point, and a fraction template icon.

**(1 point)** Student entered 31 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
9	NOAT	5.NBT.B	5.NBT.B.5	2, 6, 7, 8	2

Drag a number to each box to complete the multiplication problem.

0  
1  
2  
3  
4  
5  
6  
7  
8  
9

379  
 x46  
 -----  
 2,274  
 +15,160  
 -----  
 17,434

**(1 point)** Student selected three correct numbers.

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

A fraction is shown.

$$\frac{15}{7}$$

Which expression is equivalent to this fraction?

(A)  $15 - 7$

(B)  $15 \div 7$

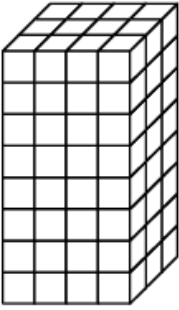
(C)  $7 - 15$

(D)  $7 \div 15$

**(1 Point)**

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
11	MDG	5.MD.C	5.MD.C.3	2, 4, 5, 6, 7	1

A rectangular prism is shown.



Which measure can be found by counting all of the cubes in this prism?

- (A) length
- (B) height
- (C) volume
- (D) surface area

**(1 point)**



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

Elise is planting vegetables in a garden. She plants potatoes in  $\frac{5}{8}$  of the garden. She plants onions in  $\frac{1}{4}$  of the garden.

What fraction of the garden is left for Elise to plant more vegetables in?

$\frac{1}{8}$

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

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

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
14	NOF	5.NF.B	5.NF.B.5	2, 4, 6, 7	2

Select all the expressions that have a value less than 3153.

$3153 \times \frac{2}{1}$

$3153 \times \frac{4}{1}$

$3153 \times \frac{1}{4}$

$3153 \times \frac{1}{2}$

$3153 \times \frac{3}{2}$

**(1 point)** Student selected the two correct expressions.

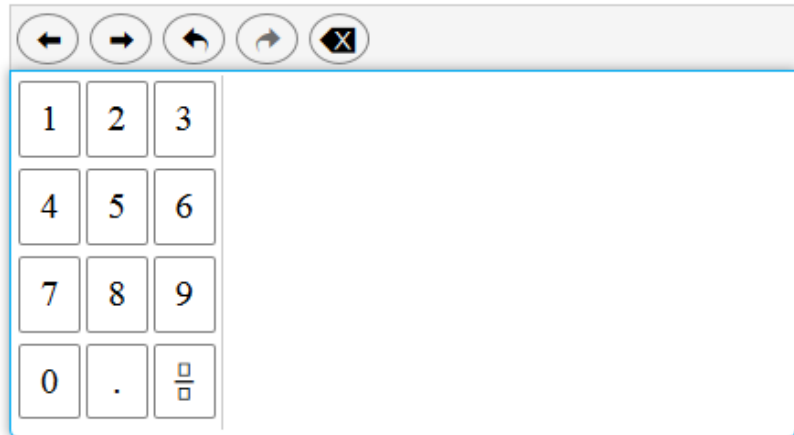


Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
15	NOAT	5.NBT.B	5.NBT.B.6	2, 3, 4, 5, 7	2

An expression is shown.

$$336 \div 14$$

What is the value of the expression?

**(1 point)** Student entered 24 or any equivalent value that is not a fraction.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
16	NOF	5.NF.A	5.NF.A.1	2, 4, 7	3

An equation is shown.

$$1\frac{5}{12} - \frac{\square}{3} = \frac{9}{12}$$

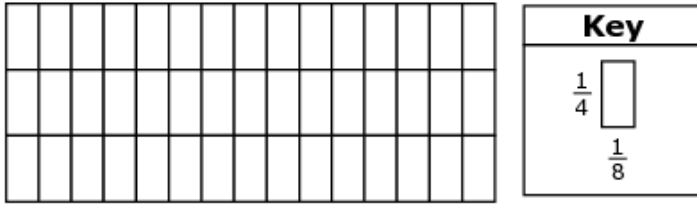
What is the missing numerator?


**(1 point)** Student entered 2 or any equivalent value.

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

A rectangular fraction model is shown.



What is the area represented by the model?

- (A)  $\frac{18}{32}$  square units
- (B)  $\frac{45}{32}$  square units
- (C)  $\frac{18}{12}$  square units
- (D)  $\frac{21}{8}$  square units

**(1 Point)**

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

Tiana has  $2\frac{2}{3}$  gallons of paint.

- She uses  $\frac{1}{2}$  of the total amount to paint her room.
- She gives  $\frac{3}{4}$  of the remaining paint to her brother.

How many gallons of paint does Tiana give to her brother?

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→
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↷
✖

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

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

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
19	NOAT	5.NBT.A	5.NBT.A.3	2, 4, 5, 6, 7	1

Enter the number twelve hundredths in decimal form.

0.12

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

**(1 point)** Student entered 0.12 or any equivalent decimal.

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

Andre wants to run 3 miles. One lap around the track is  $\frac{1}{4}$  mile.

How many laps will it take Andre to run 3 miles?

A  $\frac{3}{4}$

B 3

C 4

D 12

**(1 point)**

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

Select one phrase that describes the value of each expression.

	Greater than 3	Equal to 3	Less than 3
$3 \times \frac{1}{2}$	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
$3 \times 1\frac{1}{4}$	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
$3 \times \frac{6}{6}$	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
$3 \times \frac{3}{2}$	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**(1 Point)** Student selected the correct options.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
22	NOAT	5.NBT.A	5.NBT.A.2	2, 6, 7	2

An expression is shown.

$$2,020 \div 10^1$$

Select all of the expressions that are equivalent to the given expression.

- $202 \times 10^2$
- $20,200 \div 10^2$
- $0.202 \times 10^3$
- $2,020 \div 10^3$
- $0.00202 \times 10^4$
- $0.2002 \times 10^4$

**(1 point)** Student selected the two correct equivalent expressions.



Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
23	NOAT	5.NBT.B	5.NBT.B.5	2, 6, 7, 8	2

A multiplication problem is shown.

$$\begin{array}{r} 31,302 \\ \times \quad \square \\ \hline 93,906 \end{array}$$

What is the missing number?

3

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

**(1 point)** Student entered 3 or any equivalent value.

Item Number	Domain	Cluster	Content Standard	Math Practices	DOK
24	NOAT	5.NBT.A	5.NBT.A.4	2, 6, 7	1

Select all of the numbers that round to 5.1 when rounded to the nearest tenth.

- 5.0
- 5.01
- 5.016
- 5.099
- 5.13
- 5.17

**(1 point)** Student selected the two correct options.