



Computer-Based  
Sample Test  
Scoring Guide  
Grade 6 Math



*Created September 2021  
Prepared by the Arizona Department of Education*

## About the Sample Test Scoring Guide

The Arizona's Academic Standards Assessment (AASA) Sample Test Scoring Guides provide details about the items, student response types, correct responses, and related scoring considerations for AASA 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

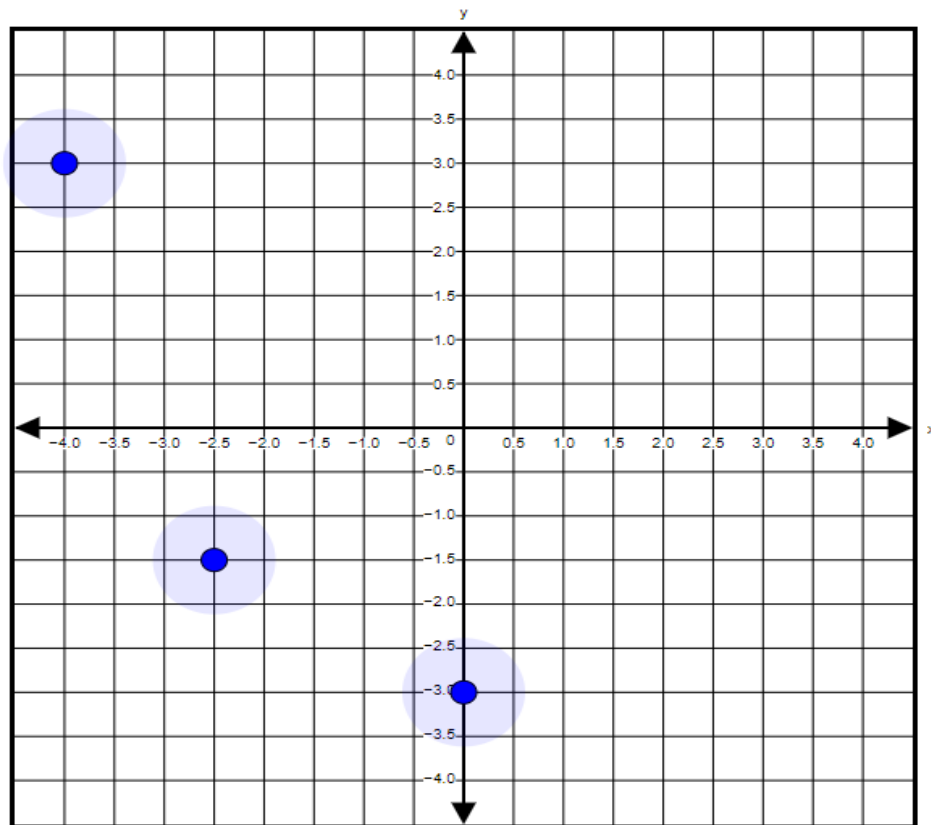
The items included in this guide are representative of the kinds of items that students can expect to experience when taking the computer-based test for AASA Grade 6 Math.

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
1	6.NS.C	6.NS.C.6	1

Plot the points  $(-4, 3)$ ,  $(-2\frac{1}{2}, -1\frac{1}{2})$ , and  $(0, -3)$  on the coordinate plane.

Select three points on the coordinate plane represented by the list of ordered pairs.



### Scoring Rubric

Score	Description
1	Student plots the points $(-4, 3)$ , $(-2\frac{1}{2}, -1\frac{1}{2})$ , and $(0, -3)$ on the coordinate plane.
0	The response is incorrect or irrelevant.

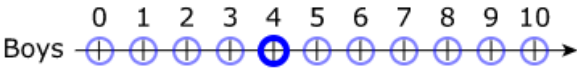
**(1 Point)**

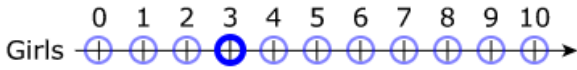
## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
2	6.RP.A	6.RP.A.3	3

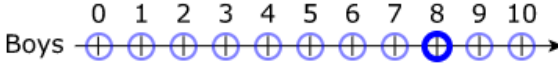
The middle school choir has a total of 45 members, and the ratio of boys to girls is 5:4. At the spring concert, 1 boy was absent and 2 girls were absent. Which points on the number lines can be used to represent the ratio of boys to girls at the spring concert?

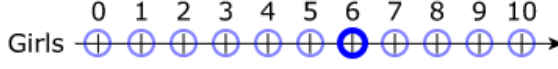
Select one location on each number line to plot the points.

Boys  0 1 2 3 4 5 6 7 8 9 10

Girls  0 1 2 3 4 5 6 7 8 9 10

**OR**

Boys  0 1 2 3 4 5 6 7 8 9 10

Girls  0 1 2 3 4 5 6 7 8 9 10

Scoring Rubric	
Score	Description
1	Student plots 4 on the "Boys" number line and 3 on the "Girls" number line, <i>OR</i> Student plots 8 on the "Boys" number line and 6 on the "Girls" number line.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

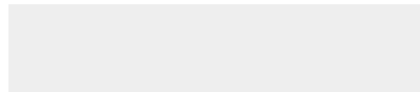
Item Number	Cluster	Content Standard	DOK
3	6.EE.B	6.EE.B.5	2

An inequality is shown.

$$2x + 10 > 30$$

Determine whether each value is a solution or is not a solution of the inequality.

Move the answers to the correct boxes.



Solution		Not a Solution		
12	14	6	8	10

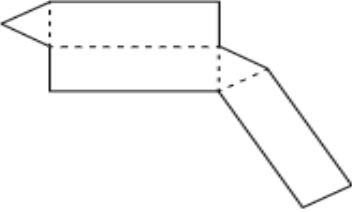
Scoring Rubric	
Score	Description
1	Student response is to place 12 and 14, in any order, into the "Solution" box and 6, 8, and 10, in any order, into the "Not a Solution" box.
0	The response is incorrect or irrelevant.

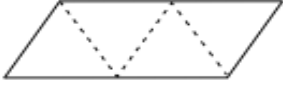
**(1 Point)**

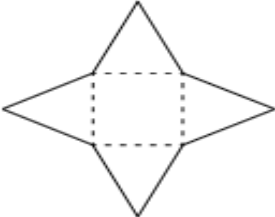
## Grade 6 Math Sample Test


Item Number	Cluster	Content Standard	DOK
4	6.G.A	6.G.A.4	2

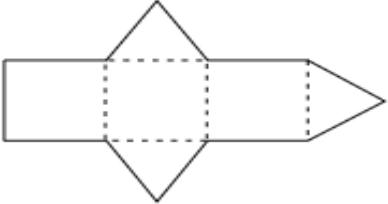
Which nets can be folded to create a triangular prism?  
 Select all the correct answers.

A. 

B. 

C. 

D. 

E. 

**(1 Point)** Student selected all of the correct answers.

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
5	6.EE.C	6.EE.C.9	3

Chantal pays \$9.99 per month for her membership at the gym. In the equation shown,  $p$  represents the amount of money Chantal pays per month,  $t$  represents the number of months of membership she has at the gym, and  $c$  represents the total amount of money Chantal pays.

$$c = pt$$

Complete the sentences by selecting the correct answers from the drop-down menus.

The total amount of money Chantal pays,  $c$ , is  the number of months of her membership at the gym. The number of months,  $t$ , is  because Chantal has control over the number of months she has a membership at the gym.

**(1 Point)** Student selected both correct answers from the dropdowns.

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
6	6.RP.A	6.RP.A.1	2

The table shows the relationship between  $x$  and  $y$  values.

$x$	3	6	8	9
$y$	15	30	40	45

Which statement is true for the ratio of  $x$  to  $y$ ?

- A. The value of  $x$  is 5 times the corresponding value of  $y$ , so the ratio of  $x$  to  $y$  is 5:1.
- B. The value of  $y$  is 5 times the corresponding value of  $x$ , so the ratio of  $x$  to  $y$  is 5:1.
- C. The value of  $x$  is 5 times the corresponding value of  $y$ , so the ratio of  $x$  to  $y$  is 1:5.
- D. The value of  $y$  is 5 times the corresponding value of  $x$ , so the ratio of  $x$  to  $y$  is 1:5.

**(1 Point)**



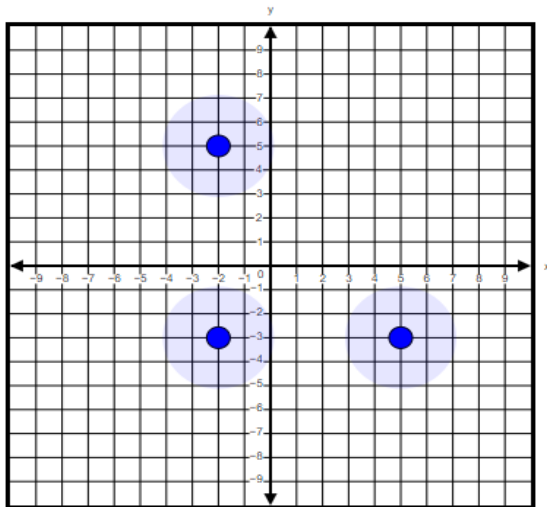
## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
7	6.NS.C	6.NS.C.8	2

A coordinate grid is used to show the distance between landmarks in a small town. Each unit represents 1 mile.

The location of the library is represented by the point  $(-2, -3)$ . The location of the police station is exactly 7 miles east of the library, and the location of the town hall is exactly 8 miles north of the library. Plot the locations of the library, police station, and town hall on the coordinate grid.

Select a location on the coordinate grid to plot each point.



### Scoring Rubric

Score	Description
1	Student plots the points $(-2, -3)$ , $(5, -3)$ , and $(-2, 5)$ on the coordinate grid.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
8	6.EE.A	6.EE.A.4	2

Which pairs of expressions are equivalent?

Select all the correct answers.

- A.  $3y$   
 $5y - 2$
- B.  $4c + 2f$   
 $c + c + c + f + c + f$
- C.  $12x \div 4$   
 $4 \div 12x$
- D.  $3f + 2g$   
 $f + f + g + g + g$
- E.  $a + a + a + b$   
 $a + a + b + a$

**(1 Point)** Student selected all of the correct answers.

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
9	6.NS.B	6.NS.B.3	1

What is the product of 4.12 and 0.33?

Enter your answer in the space provided.

1.3596

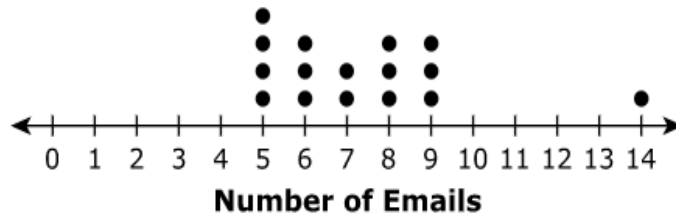
Scoring Rubric	
Score	Description
1	Student response is to enter 1.3596 or equivalent value.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
10	6.SP.A	6.SP.A.2	2

Warren recorded the number of emails he received each day for 16 days. The dot plot shown represents the data he collected.



Explain the data shown on the dot plot.

Complete the sentences by selecting the correct answer from each drop-down menu.

The gap in the data between 9 and 14 shows that

Warren had 0 days where he counted 10, 11, 12, or 13 emails

The data that Warren collected are  .

**(1 Point)** Student selected both correct answers from the dropdowns.

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
11	6.EE.B	6.EE.B.7	2

Which statements about the equation  $\frac{2}{3}x = 8$  are true?

Select all the correct answers.

- A. The equation can be solved by dividing both sides by  $\frac{3}{2}$ .
- B. The equation has the same solution as  $\frac{1}{2}x = 6$ .
- C. The equation can be solved by subtracting  $\frac{2}{3}$  from both sides.
- D. The equation has the same solution as  $2x - 6$ .
- E. The equation can be solved by multiplying each side by  $\frac{3}{2}$ .

**(1 Point)** Student selected all of the correct answers.

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
12	6.NS.B	6.NS.B.2	1

Which quotients have a remainder and which do not?

Select all the correct answers.

Division Expression	Remainder	No Remainder
$6076 \div 98$	<input type="radio"/>	<input checked="" type="radio"/>
$5604 \div 84$	<input checked="" type="radio"/>	<input type="radio"/>

Scoring Rubric	
Score	Description
1	Student responses are: "No Remainder" for the first expression and "Remainder" for the second expression. $6076 \div 98 = 62$ ; $5604 \div 84 = 66 \text{ R}60$ .
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

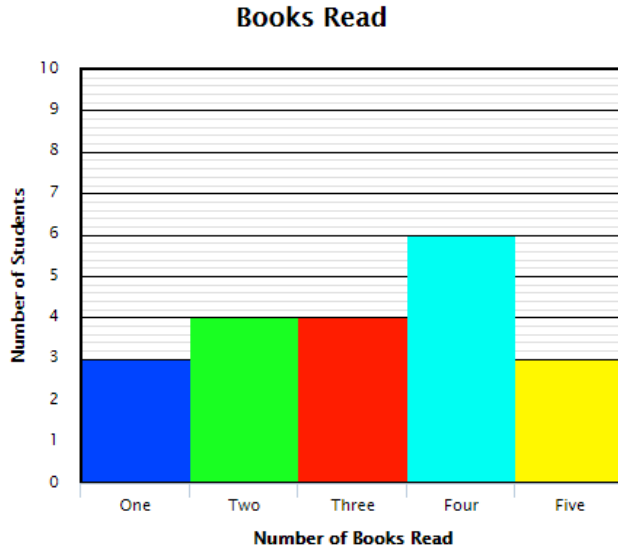
Item Number	Cluster	Content Standard	DOK
13	6.SP.B	6.SP.B.4	3

The 20 students in Mr. Cole's class kept track of how many books they read over winter break. The list shows the number of books read by each student.

1, 3, 2, 5, 3, 4, 1, 5, 4, 3, 2, 4, 5, 2, 4, 3, 1, 4, 2, 4

Create a histogram that represents the data.

Drag the top of each bar to the correct height.



### Scoring Rubric

Score	Description
1	<p>Student response is to drag the bars to the following values:</p> <ul style="list-style-type: none"> <li>• One = 3</li> <li>• Two = 4</li> <li>• Three = 4</li> <li>• Four = 6</li> <li>• Five = 3</li> </ul>
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
14	6.EE.A	6.EE.A.2	2

What is the solution to the expression  $a^2 + 2b \div c$  when  $a = 6$ ,  $b = 8$ , and  $c = 2$ ?

- A. 20
- B. 26
- C. 44
- D. 152

**(1 Point)**



## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
15	6.NS.A	6.NS.A.1	2

Which expression is equivalent to  $\frac{3}{5} \div \frac{1}{2}$ ?

- A.  $\frac{5}{3} \div \frac{1}{2}$
- B.  $\frac{3}{5} \div \frac{2}{1}$
- C.  $\frac{5}{3} \times \frac{1}{2}$
- D.  $\frac{3}{5} \times \frac{2}{1}$

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
16	6.EE.A	6.EE.A.3	2

Complete the table to identify the pairs of expressions as equivalent or not equivalent.

Move the correct answer to each box. Each answer may be used more than once.

Equivalent

Not equivalent

Expression 1	Expression 2	Equivalent or Not Equivalent
$3(5x + 4)$	$8x + 7$	Not equivalent
$\frac{1}{3}(9 - 6x)$	$x$	Not equivalent
$12(14 + x)$	$12x + 168$	Equivalent

### Scoring Rubric

Score	Description
1	Student response is to identify the pairs of expressions as follows: Pair 1: $3(5x + 4)$ ; $8x + 7$ ; Not equivalent Pair 2: $\frac{1}{3}(9 - 6x)$ ; $x$ ; Not equivalent Pair 3: $12(14 + x)$ ; $12x + 168$ ; Equivalent
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
17	6.NS.B	6.NS.B.4	3

Determine whether each statement is always true, sometimes true, or never true.

Select all the correct answers.

Statement	Always True	Sometimes True	Never True
The greatest common factor of any two different prime numbers is 1.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
If $z$ is the greatest common factor of $x$ and $y$ , then $z < x$ and $z < y$ .	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
The least common multiple of any two numbers is equal to the product of the two numbers.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Scoring Rubric	
Score	Description
1	Student responses are: <ul style="list-style-type: none"> <li>• Statement 1 - Always True</li> <li>• Statement 2 - Sometimes True</li> <li>• Statement 3 - Sometimes True</li> </ul>
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
18	6.EE.A	6.EE.A.1	2

Evaluate each expression shown in the table.

Move the correct answer to each box. Not all answers will be used.

Expression	Answer
$3^2 + 2(8 - 6)$	<input type="text" value="13"/>
$6(4 + 7) - 4^2$	<input type="text" value="50"/>
$4(2^3 + 7) - 15$	<input type="text" value="45"/>

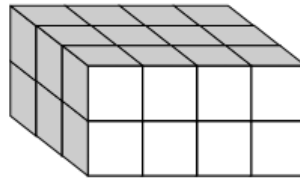
Scoring Rubric	
Score	Description
1	Student response is to evaluate the following expressions: $3^2 + 2(8 - 6) = 13$ $6(4 + 7) - 4^2 = 50$ $4(2^3 + 7) - 15 = 45$
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
19	6.G.A	6.G.A.2	3

Each cube in the figure shown has edges that are  $\frac{1}{x}$  inch long.



Create an expression that represents the volume of the figure.

Enter your answer in the space provided.

$\frac{24}{x^3}$

← → ↶ ↷ ✕

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

Scoring Rubric	
Score	Description
1	Student response is to enter 24 in gap 1 and 3 in gap 2 to create $\frac{24}{x^3}$ . Equivalent numbers are allowed.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
20	6.EE.B	6.EE.B.6	2

Jayden played a game that required him to answer questions. He earned 5 points for every correct answer and lost 3 points for every incorrect answer.

Write an expression to represent Jayden's total score. Use  $x$  to represent the number of questions he answered correctly, and use  $y$  to represent the number of questions he answered incorrectly.

Enter your answer in the space provided.

$5x - 3y$

←
→
↶
↷
✕

1	2	3	$x$	$y$				
4	5	6	+	-	·	÷		
7	8	9	<	≤	=	≥	>	
	0	$\frac{\square}{\square}$	$\square^\square$	( )				
.	-	$\frac{\square}{\square}$						

Scoring Rubric	
Score	Description
1	Student response is $5x - 3y$ or equivalent expressions. No variable substitutions allowed. Equations that include the above and include an empty box or a question mark after an equal sign are acceptable.
0	The response is incorrect or irrelevant.

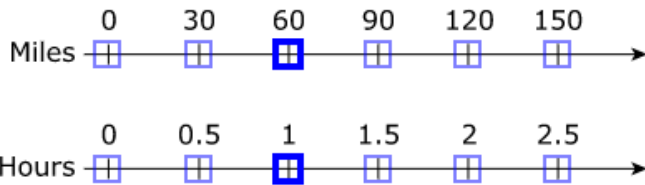
**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
21	6.RP.A	6.RP.A.2	2

The Johnson family drove 150 miles in 2.5 hours. What unit rate represents the distance the family traveled **each** hour?

Select one location on each number line to plot the points.



Scoring Rubric	
Score	Description
1	Student selects locations of 60 miles and 1 hour or equivalent answers. $150/2.5 = 60$ miles per hour.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
22	6.NS.C	6.NS.C.5	2

The table shows the changes in the balance of Maggie's bank account during the months of October through December.

**Maggie's Bank Account**

Month	Change in Account Balance (dollars)
October	0
November	+500
December	-400

Which statements are true about the changes in the balance of Maggie's bank account?

Select all the correct answers.

- A. October had no increase or decrease.
- B. November had an increase of \$500.
- C. November had a decrease of \$500.
- D. December had an increase of \$400.
- E. December had a decrease of \$400.

**(1 Point)** Student selected all of the correct answers.



# Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
23	6.G.A	6.G.A.1	3

A garden and its dimensions, in feet (ft), are shown.

What is the area, in square feet, of the garden?  
Enter your answer in the space provided.

180

← → ↶ ↷ ✕

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

Scoring Rubric	
Score	Description
1	Student response is 180 or equivalent value.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
24	6.NS.C	6.NS.C.7	3

The inequality shown is true for integers  $a$  and  $b$ .

$$a \neq b$$

Which symbol,  $>$ ,  $<$ , or  $=$ , will make each statement true?

Move the correct symbol into each box. Each symbol may be used more than once. Not all symbols will be used.

$>$ 
  $<$ 
  $=$

$$-|b| \boxed{<} |a|$$

$$|a - b| \boxed{=} |b - a|$$

Scoring Rubric	
Score	Description
1	Student response is to place $<$ in Gap 1 and $=$ in Gap 2.
0	The response is incorrect or irrelevant.

**(1 Point)**

## Grade 6 Math Sample Test

Item Number	Cluster	Content Standard	DOK
25	6.EE.B	6.EE.B.8	2

In order to be permitted to ride a roller coaster, a person must be at least 48 inches (in) tall.

Which inequality represents the heights,  $h$ , in inches, of people who are permitted to ride a roller coaster?

- A.  $h < 48$  in
- B.  $h \leq 48$  in
- C.  $h \geq 48$  in
- D.  $h > 48$  in

**(1 Point)**