

***Grades 5-6 Mathematics  
Training Test  
Answer Key***



**Question 1**  
**Grade 5**

**1**



What is the product of 68 and 90?

- (A) 612
- (B) 1,260
- (C) 6,120
- (D) 6,300

*Option A is incorrect because the number is missing a place value.*

*Option B is incorrect because  $90 \times 8 + 90 \times 6$  may have been computed.*

*Option C is correct because  $68 \times 90$  is 6,120.*

*Option D is incorrect because 68 may have been rounded to 70.*

**Question 2**  
Grade 5

**2**



The numbers 8 and 6 are added, and the sum is then multiplied by 3.

- A. Drag numbers to the boxes and symbols to the circles to represent the expression described.
- B. Drag numbers to the boxes and symbols to the circles to create an equivalent expression to the one you created in part A.

3

6

8

×

+

Create

**A.**

8
+
6
)
×
3

---

**B.**

8
×
3
)
+
6
×
3
)

**Other Correct Responses:**

- part A:  $(6 + 8) \times 3$
- part B: any equivalent expression that correctly applies the distributive property

**Question 3**  
**Grade 5**

3



Consider the family of quadrilaterals that includes parallelograms, rectangles, squares, and rhombuses. Select all the statements about these quadrilaterals that are true.

- Squares are always rectangles.
- Rectangles are always squares.
- Rhombuses are always squares.
- Squares are always rhombuses.
- Rhombuses are always parallelograms.
- Rhombuses are sometimes rectangles.

*The first option is correct because both squares and rectangles are defined as having four right angles, with opposite parallel and congruent sides.*

*The second option is incorrect because squares must have all sides congruent.*

*The third option is incorrect because the angles in a rhombus are not always 90 degrees.*

*The fourth option is correct because both squares and rhombuses have congruent sides and opposite parallel sides.*

*The fifth option is correct because both rhombuses and parallelograms have opposite parallel sides.*

*The sixth option is correct because rhombuses that are squares are also rectangles.*

**Question 4**  
**Grade 6**

4

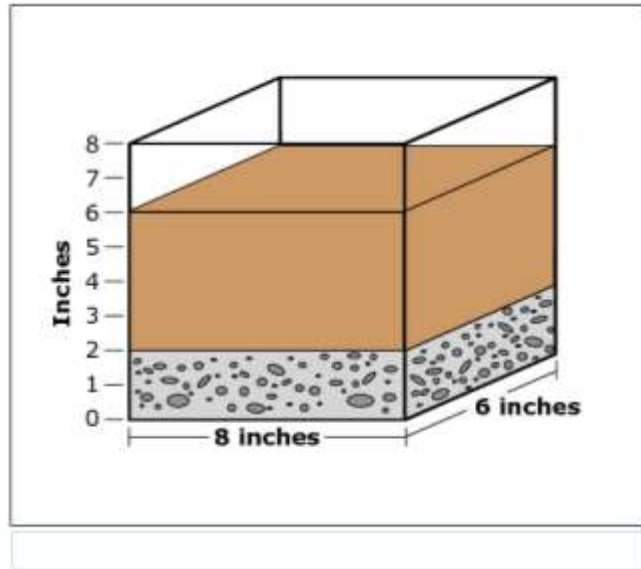


Charlie is creating a terrarium.

He put rocks in the bottom, and now he needs to put in soil.

At least  $\frac{1}{3}$  of the terrarium should be filled with soil, but Charlie only has 250 cubic inches of soil.

Click on the terrarium to fill it with the correct amount of soil.



**Other Correct Responses:**

- any model showing a soil height reaching between 5 inches and 7 inches

**Question 5**  
**Grade 5**

5



The manager of a youth soccer team bought 50 packages of socks for \$10 each. He estimated the total cost to be \$5,000.

Create an equation that shows how many times more the manager's estimate,  $e$ , was than the actual cost,  $a$ .

$a \times 10 = e$									
← → ↶ ↷ ✖									
1	2	3	a	e					
4	5	6	+	-	x	÷			
7	8	9	<	=	>				
0	.	$\frac{\square}{\square}$	$\square^\square$	()					

**Other Correct Responses:**

- *any equivalent equation*

Question 6  
Grade 6

6



Two expressions are shown

$$3^2 \times 3^3$$

$$3^5$$

What is the value of each expression?

Enter each answer on a separate line.

243

243

← → ↶ ↷ ✕

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

**Question 7**  
**Grade 5**

**7**



A multiplication problem is shown in the answer space.

Drag numbers to the boxes to complete the problem.

0

1

2

3

4

5

6

7

8

9

$$\begin{array}{r} 682 \\ \times 27 \\ \hline 4774 \\ 13640 \\ \hline 18414 \end{array}$$






**Question 8**  
**Grade 6**

**8**



Drag an inequality sign to each box to compare the pairs of numbers.



-4  -1

-4  1

-3  -6

Question 9  
Grade 5

9



A table is shown.

Pattern A	4	5	6	7	8
Pattern B	12	15	18	21	24

Create an equation that describes the relationship between Pattern A and Pattern B.

$$3A = B$$

← → ↶ ↷ ✕

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

**Other Correct Responses:**

- any equivalent equation

**Question 10**  
Grade 5

10



A table is shown.

Pattern A	5	7	9	11	13	15
Pattern B	15	17	19	21	23	25

Create two different equations that show how Pattern A and Pattern B are related to each other.

Enter each equation on a separate line.

$$A + 10 = B$$

$$B - 10 = A$$

← → ↶ ↷ ✖

1	2	3	A	B		
4	5	6	+	-	×	÷
7	8	9	<	=	>	
0	.	$\frac{\square}{\square}$	$\square^\square$	()		

**Other Correct Responses:**

- any equivalent equations
- the order of the responses may be reversed.

**Question 11**  
**Grade 6**

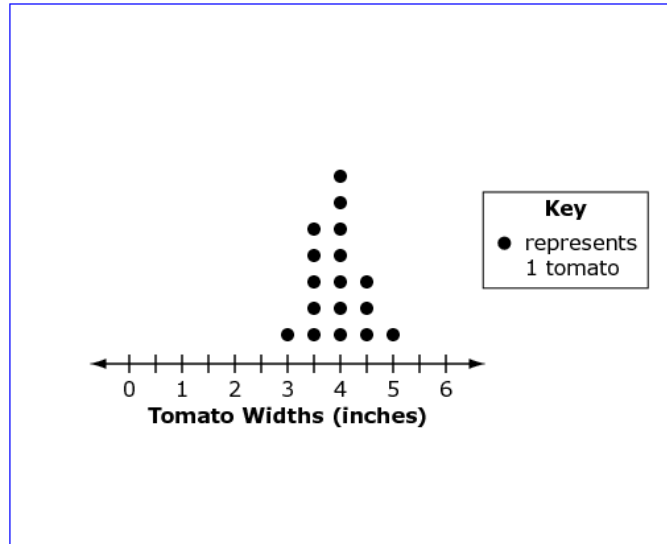
**11**



Middle school students are growing tomatoes. They record the width, in inches, of 17 tomatoes, as shown.

3, 3.5, 3.5, 3.5, 3.5, 3.5,  
4, 4, 4, 4, 4, 4, 4, 4.5,  
4.5, 4.5, 5

Click above the number line to create a line plot that represents the data shown.



**Question 12**  
**Grade 5**

12



Two fractions with different denominators have a sum of  $\frac{7}{12}$ .

What are two possible addends that result in this sum?

Enter each answer on a separate line.

$\frac{5}{12}$
$\frac{1}{6}$

**Other Correct Responses:**

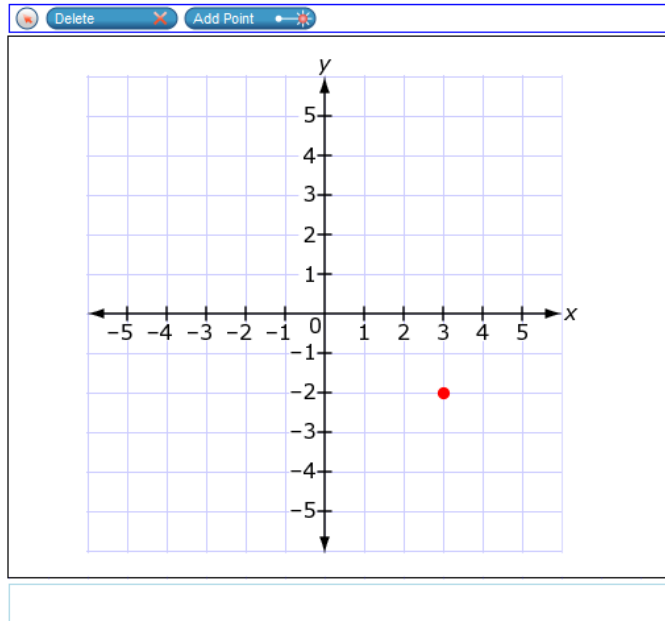
- any two fractions that have a sum of  $\frac{7}{12}$  and have different denominators

**Question 13**  
**Grade 6**

**13**



Use the Add Point tool to place a point at  $(3, -2)$ .

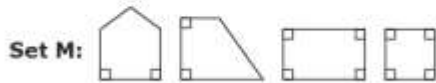


**Question 14**  
Grade 5

14



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.

*The first option is correct because every shape in Set M has at least 2 right angles.*

*The second option is incorrect because only two of the shapes in Set M are parallelograms.*

*The third option is correct because there are two parallelograms in Set N.*

*The fourth option is correct because one of the shapes in Set N fits the classifications of a rhombus.*

*The fifth option is incorrect because two of the shapes have more than 4 sides.*

**Question 15**  
Grade 5

**15**



Juan has two pictures on his desk. The measurements are as follows:

- Picture A: 4 inches by  $\frac{1}{2}$  inch
- Picture B: 4 inches by 2 inches

Use the Connect Line tool to draw the shape of each picture using the scale provided.

How much larger is Picture B than Picture A?

Drag a number to the box to complete the sentence.

Delete
Add Point
Connect Line

	Picture A	Picture B
0		
1		
2		
3	••	••
4		
5		
6		
7		
8		
9	••	••

$\frac{1}{2}$  inch

Picture B is 4 times larger than Picture A.



**Question 16**  
**Grade 6**

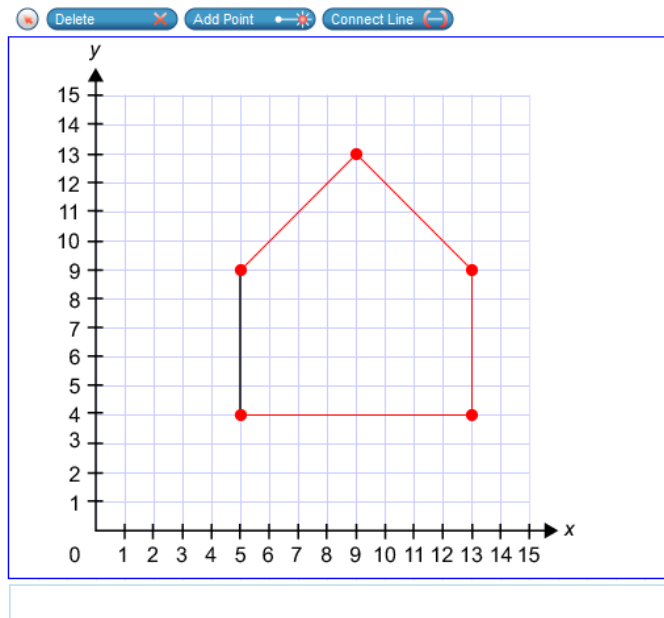
**16**



One side of a pentagon with vertices at  $(5, 4)$  and  $(5, 9)$  are shown.

Use the Connect Line tool to draw the remaining sides of the pentagon with these conditions:

- at least two sides each have a length of 5 units, and
- at least one side has a length of 8 units.



**Other Correct Responses:**

- *any pentagon that satisfies the requirements*

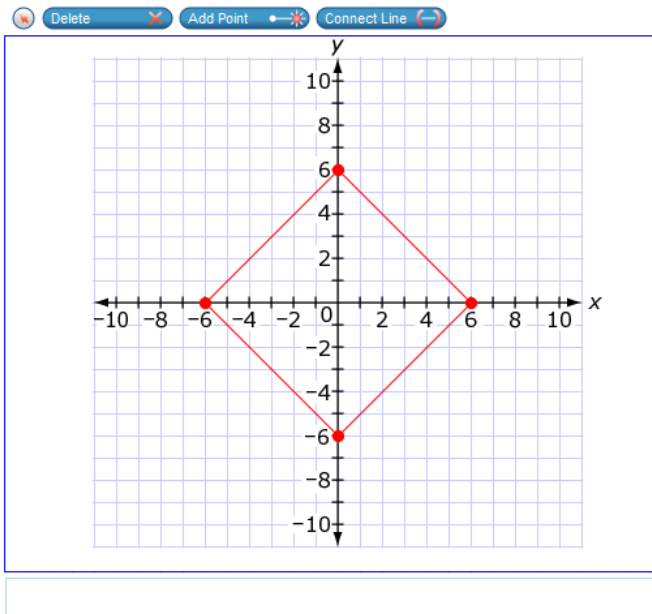
**Question 17**  
**Grade 6**

**17**



The vertices for one side of a rhombus are located at  $(-6, 0)$  and  $(0, 6)$ .

Use the Connect Line tool to draw the rhombus.



**Question 18**  
**Grade 5**

**18**



An expression is given in words.

*Add seven and seven, then multiply by seven, then divide by seven.*

Which numeric expression is equivalent to the one given?

- Ⓐ  $(7 \times 7) + 7 \div 7$
- Ⓑ  $7 \times 7 + (7 \div 7)$
- Ⓒ  $(7 \times 7 + 7) \div 7$
- Ⓓ  $7 \times (7 + 7) \div 7$

*Option A is incorrect because the sum of 7 and 7 should have been within parentheses.*

*Option B is incorrect because the sum of 7 and 7 should have been within parentheses.*

*Option C is incorrect because the expression is equivalent to 8 instead of 14.*

*Option D is correct because the numerical expression is equivalent to the verbal expression.*

**Question 19**  
**Grade 6**

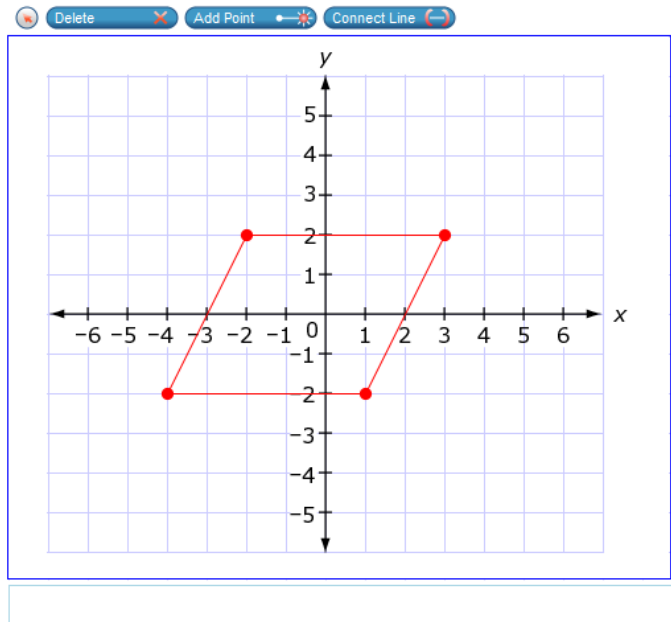
**19**



Three vertices of a parallelogram are shown.

$(-2, 2)$ ,  $(3, 2)$ , and  $(1, -2)$

Use the Connect Line tool to draw the parallelogram.



Question 20  
Grade 5

20



Two fractions have a sum of  $\frac{1}{3}$ .

The denominators of the two fractions are different.

Drag numbers to the boxes to show an equation that meets these conditions.

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Delete

Fraction Equation

$$\frac{\boxed{1}}{\boxed{6}} + \frac{\boxed{2}}{\boxed{12}} = \frac{1}{3}$$

**Other Correct Responses:**

- any two fractions with different denominators and a sum of  $\frac{1}{3}$ .

**Question 21**  
Grade 5

**21**



A problem is shown.

Click on an expression to highlight where the first error in solving the problem occurred.

Then drag numbers to the box to show the correct answer to the problem.

- 0
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Delete

$$16 + [ 9 \times ( 3 - 1 ) + 8 ] \div 2$$

$$16 + [ 9 \times 2 + 8 ] \div 2$$

$$16 + [ 9 \times 2 + 4 ]$$

$$16 + [ 18 + 4 ]$$

$$16 + 22$$

$$38$$

$$16 + [ 9 \times ( 3 - 1 ) + 8 ] \div 2 = \boxed{29}$$

**Question 22**  
**Grade 6**

22



The base and height of a triangle are each equal to the side length of a square. How does the area of the triangle relate to the area of the square? Type your answer in the space provided.

The area of the triangle is half the area of the square.

**Other Correct Responses:**

- *The area of a square is twice the area of a triangle.*