New York State Testing Program
Grade 3 Common Core
Mathematics Test

Released Questions with Annotations

Practice Copy

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on the grid in the center of the page, click on the link for your grade
(The numbers in parentheses show the question's page number)
Which measure best represents the distance from 0 to point N on the number line below?

A $\frac{1}{6}$ unit
B $\frac{1}{5}$ unit
C $\frac{1}{4}$ unit
D $\frac{1}{3}$ unit

What number sentence is another way to represent the missing number in the equation $36 \div 4 = \square$?

A $\square \times 4 = 36$
B $36 \times 4 = \square$
C $36 + 4 = \square$
D $\square \div 4 = 36$
What is another way of expressing $8 \times 12$?

A  $(8 \times 10) + (8 \times 2)$
B  $(8 \times 1) + (8 \times 2)$
C  $(8 \times 10) + 2$
D  $8 + (10 \times 2)$

Which fraction goes in the blank to make a true number sentence?

$$\frac{4}{8} > ?$$

A  $\frac{4}{6}$
B  $\frac{2}{8}$
C  $\frac{7}{8}$
D  $\frac{4}{4}$
Sue is going to cover her kitchen floor with tiles that are each 1 square foot. The floor is in the shape of a rectangle that is 6 feet wide and 8 feet long. How many tiles are needed to cover the floor?

A 14  
B 24  
C 28  
D 48

What is the area, in square units, of the shaded part of the figure?

A 18  
B 20  
C 22  
D 42
The number of objects described in which situation can be represented by 24 ÷ 4?

A  There are 24 boxes with 4 pencils in each box.
B  There are 24 people on a bus, and 4 people get off the bus.
C  There are 24 marbles that need to be sorted into 4 equal groups.
D  There are 24 books on a shelf, and 4 more books are put on the shelf.

The garden below was divided into two regions—one for carrots and one for peas.

Which expression represents the area, in square units, of the whole garden?

A  \((5 + 10) + (5 + 6)\)
B  \((5 \times 10) \times (5 \times 6)\)
C  \((5 \times 10) + (5 \times 6)\)
D  \((5 + 10) \times (5 + 6)\)
Which number represents the location of point P on the number line below?

\[ \begin{array}{c}
\text{A} & \frac{2}{7} \\
\text{B} & \frac{2}{6} \\
\text{C} & \frac{3}{7} \\
\text{D} & \frac{2}{4} \\
\end{array} \]

(9)

The Rogers family drove a total of 482 miles, starting on Friday and ending on Sunday. They drove 138 miles on Friday and 225 miles on Saturday. How many miles did they drive on Sunday?

\[ \begin{array}{c}
\text{A} & 119 \\
\text{B} & 121 \\
\text{C} & 363 \\
\text{D} & 745 \\
\end{array} \]

(10)
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.

What was the total amount earned for the sale of all the cakes?

*Show your work.*

*Answer* $___________________
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

*Show your work or explain how you got your answer.*

*Answer* ________________ and ________________
On the grid below, join 3 of the rectangles together, without overlapping, to form one figure that has an area of 22 square units. Use the rectangles shown in the diagram on page X.
Measured CCLS: 3.OA.8

Commentary: This item measures 3.OA.8 because it asks the student to solve a two-step word problem using multiplication.

Extended Rationale: The correct answer of $90 could be arrived at by first multiplying the number of cakes by the number of slices for each cake: $3 \times 6 = 18$. This shows that there are 18 slices of cake, in all, if each cake is cut into 6 slices. Then the student must multiply the number of slices by the cost of each slice: $18 \times 5 = 90$. The total amount earned for the sale of all the pieces in all three cakes is $90.

SAMPLE STUDENT RESPONSES AND SCORES APPEAR ON THE FOLLOWING PAGES:
Score Point 2 (out of 2 points)

This response answers the question correctly and uses both visual representation and correct calculations to demonstrate a thorough understanding of the mathematical concepts. The work shown correctly determines that 6 slices × $5 = $30 per cake and that $30 × 3 cakes = $90.
Score Point 2 (out of 2 points)

This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. This response identifies that each cake earned $30 ($5 \times 6 = $30) and the total revenue of 3 cakes sold was $90 ($30 \times 3 = $90).
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.

What was the total amount earned for the sale of all the cakes?

Show your work.

\[6 \times 3 = 18\]

\[18 \times 5 = 90\]

Score Point 2 (out of 2 points)

This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. This response shows that if each cake has 6 slices, then 3 cakes produce 18 slices for sale \((6 \times 3 = 18)\). At $5 a slice, the total revenue was $90 \((18 \times 5 = 90)\).
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.

What was the total amount earned for the sale of all the cakes?

Show your work.

\[6 \times \$5.00 = \$30.00\]

Answer $30.00

Score Point 1 (out of 2 points)
This response demonstrates partial understanding of the mathematical concepts embodied in this task by correctly determining that each cake would generate $30 in revenue \((6 \times \$5.00 = \$30.00)\). However, the total amount earned for the sale of all the cakes has not been calculated.
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.

What was the total amount earned for the sale of all the cakes?

Show your work.

30 dollars

5, 10, 15, 20, 25, 30

Answer: 30 dollars

Score Point 1 (out of 2 points)

This response demonstrates partial understanding of the mathematical concepts embodied in this task by correctly determining that each cake would generate $30 in revenue ($5 + $5 + $5 + $5 + $5 = $30). However, the total amount earned for the sale of all the cakes has not been calculated.
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.
What was the total amount earned for the sale of all the cakes?

Show your work.

\[ 6 \times 5 = 30 \]
\[ 30 \times 3 = 60 \]

Answer 5

Score Point 1 (out of 2 points)
This response demonstrates partial understanding of the mathematical concepts embodied in this task by correctly determining that each cake would generate $30 in revenue \((6 \times 5 = 30)\). However, the work to determine the total amount earned by the sale of 3 cakes includes a calculation error \((30 \times 3 = 60)\) that results in an incorrect answer.
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.

What was the total amount earned for the sale of all the cakes?

Show your work.

\[
\text{\$18.00}
\]

Score Point 0 (out of 2 points)
This response is incorrect. This response incorrectly adds slices to equal dollars.
A bake sale had the 3 cakes, as shown below, for sale.

Each cake was cut into 6 slices. Each slice was sold for $5.
What was the total amount earned for the sale of all the cakes?

Show your work.

\[
\begin{align*}
3 + 3 &= 6 \\
5 &\times 6 = 30 \\
\text{Answer: } &= 14.00
\end{align*}
\]

Score Point 0 (out of 2 points)
This response is incorrect. The process of adding all slices, cakes and dollars is an incorrect procedure.
Measured CCLS: 3.MD.7a; 3MD.7d

Commentary: This item measures 3.MD.7a because it asks the student to find the area of a rectangle with whole number side lengths by tiling it with unit squares. It also measures 3.MD.7d because asking students to create a new figure from the given rectangles with a specified area demonstrates an understanding that area is additive; adding the areas of smaller, component parts will yield the area of an entire region.

Extended Rationale: The correct answer to the first part of the item is determined by finding the area of each shaded rectangle. The process can be achieved either by forming square units based on tiling and counting the units, or by multiplying side lengths. With this process, the student would determine that rectangle C and rectangle D both have the area of 12 square units. The student could explain that rectangle C has side lengths of 2 units and 6 units; multiplying the side lengths would equal an area of 12 square units. Rectangle D has side lengths of 3 units and 4 units; multiplying these side lengths would also equal 12 square units.

With the second part of the item, the student could find three rectangles that have compatible lengths and widths which can be combined to form one large figure. Some students may recognize that rectangles A, B and C all have one side length that is 2 units wide. The length of the three rectangles combined is 11 units. The student could either multiply side lengths or count unit squares to determine that rectangles A, B, and C combined in any arrangement would form a figure that has an area of 22 square units. Students may also calculate the area of all five rectangles and employ a different set of three rectangles that leads to a total area of 22 square units, such as A, B, and D.

SAMPLE STUDENT RESPONSES AND SCORES APPEAR ON THE FOLLOWING PAGES:
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

Show your work or explain how you got your answer.

Answer: D and C
Score Point 3 (out of 3 points)

This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. This response illustrates both the counting of square units of all figures and the multiplication of the dimensions of D and C that leads to the correct answers D and C. This response also correctly solves the third part by joining three rectangles (A, B, D) together to form a figure that has an area of 22 square units.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

Show your work or explain how you got your answer.

I just drew the lines through the shape and C looked like a lot so did D. So I counted them and for both I got 13.

Answer: D and C
Score Point 3 (out of 3 points)
This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. This response adequately explains the process (drawing lines through the figures, counting, and comparing) to arrive at the correct answers D and C. The third part of the response is correctly solved by joining three rectangles (A, B, C) together to form a figure that has an area of 22 square units. Note: rectangles do not need to be labeled, and may be transposed to arrive at a figure that has an area of 22 square units.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

Show your work or explain how you got your answer.

I counted each figure and I wrote the number next to them then I got my answer.

Answer: D and C
Score Point 3 (out of 3 points)
This response answers the question correctly and demonstrates a thorough understanding of the mathematical concepts. This response adequately explains the work (counting and numbering each figure) that leads to the correct answer, D and C. In addition, the third part of the response is correctly solved by joining three rectangles (A, B, C) together to form a figure that has an area of 22 square units.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

*Show your work or explain how you got your answer.*

Answer: C and D
Score Point 2 (out of 3 points)
This response demonstrates partial understanding of the mathematical concepts embodied in the task. This response adequately explains the process (drawing lines through the figures in the diagram and labeling them with accurate numerical values) to arrive at the correct answers D and C. However, the last figure does not have an area of 22 square units.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

Show your work or explain how you got your answer.

Answer: Square and rectangle
Score Point 2 (out of 3 points)
This response demonstrates partial understanding of the mathematical concepts embodied in the task. This response answers the first part of the question adequately by properly drawing lines in the diagram (drawing correct lines without labeling is sufficient). A figure of 22 square units is constructed correctly by combining the rectangles A, B, and D. However, the two figures that have the same area are not correctly identified.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

Show your work or explain how you got your answer.

D and C are the same because they add up to 12.

Answer: D and C
Score Point 2 (out of 3 points)

This response demonstrates partial understanding of the mathematical concepts embodied in the task. This response adequately explains the work by indicating that the squares were counted in order to arrive at the correct answer D and C. However, although the rectangles drawn on the last grid cover 22 square units, they are not joined to form one figure. Note: Two of the same rectangles given may be used to form a figure that has an area of 22 units.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

**Show your work or explain how you got your answer.**

\[
\begin{align*}
A &= 4 \\
B &= 16 \\
C &= 12 \\
D &= 12 \\
E &= 6
\end{align*}
\]

Answer _______________ and _______________
On the grid below, join 3 of the rectangles together, without overlapping, to form one figure that has an area of 22 square units. Use the rectangles shown in the diagram on page 8.

Score Point 1 (out of 3 points)
This response demonstrates only a limited understanding of the mathematical concepts embodied in the task. Although the values of B and E are incorrect, C and D are correct. The answer given (C and D) is correct. However, the three rectangles drawn on the last grid do not have an area of 22 units.
The diagram shows the size of 5 different rectangles.

KEY

[Diagram showing 5 rectangles with a key indicating 1 square unit per box]

Which 2 figures have the same area?

Show your work or explain how you got your answer.

Answer: ___________ and ___________
Score Point 1 (out of 3 points)
This response demonstrates only a limited understanding of the mathematical concepts embodied in the task. The two figures named (E and C) and the work shown are incorrect. However, the figure shown in the last grid has 22 square units and is correct. Note: it is not required to label the rectangles used in the figure shown.
The diagram shows the size of 5 different rectangles.

**KEY**

==========

| 1 square unit |

Which 2 figures have the same area?

*Show your work or explain how you got your answer.*

I counted very carefully and D and C are equal.

Answer: D and C
Score Point 1 (out of 3 points)

The work shown in this response demonstrates only a limited understanding of the mathematical concepts embodied in the task. The answer given (D and C) is correct. However, the attempt in the final grid to construct a figure with an area of 22 units exhibits multiple flaws related to a misunderstanding of the aspects of the task: the number of units indicated is 36, and the rectangles are not joined.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

Show your work or explain how you got your answer.

\[
\begin{align*}
B &= 14 \\
A &= 12 \\
E &= 16 \\
C &= 20
\end{align*}
\]

Answer: \[D\] and \[C\]
On the grid below, join 3 of the rectangles together, without overlapping, to form one figure that has an area of 22 square units. Use the rectangles shown in the diagram on page 8.

KEY

= 1 square unit

Score Point 0 (out of 3 points)
This response contains a correct answer (D and C); however, it is arrived at by using an obviously incorrect procedure. The figure drawn on the final grid is incorrect. Holistically, this response is not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.
The diagram shows the size of 5 different rectangles.

Which 2 figures have the same area?

*Show your work or explain how you got your answer.*

Answer: A and B
On the grid below, join 3 of the rectangles together, without overlapping, to form one figure that has an area of 22 square units. Use the rectangles shown in the diagram on page 8.

Score Point 0 (out of 3 points)
This response contains no work and an incorrect answer. The figures drawn in the final grid do have an area of 22 square units but the rectangles are not joined. This response is not sufficient to demonstrate even a limited understanding of the mathematical concepts embodied in the task.