Week 1 Thursday Course 3 Warm-up

The sum of two numbers is 36. Their difference is 14. What are the two numbers?

Finding Functions

Which ordered pair (x,y) can be added to the table so that y is still a function of x?

x	-5	14	17	-8	
y	3	-8	-9	5	

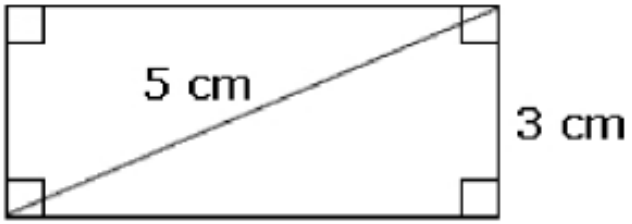
A) (17, 3)

B) (-6, -3)

C) (-8, -5)

D) (-5, 5)

What is the area of the rectangle?



Week 1 Thursday Course 3 Warm-up

The sum of two numbers is 36. Their difference is 14. What are the two numbers?

11 and 25

Which ordered pair (x, y) can b function of x?

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A) (17, 3)

✔ B) (-6, -3)

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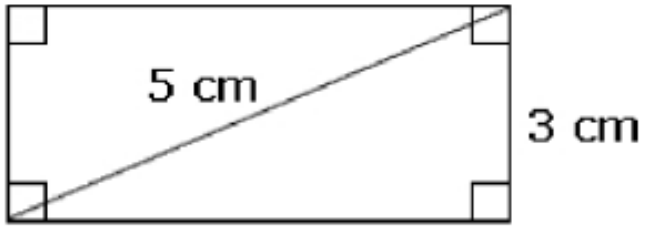
What is the area of the rectangle?

12cm^2



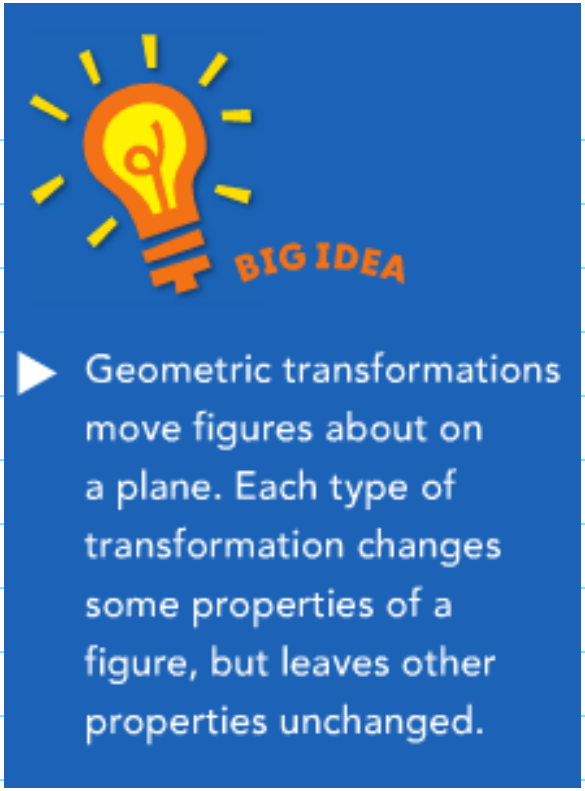
Lesson 8.2 Reflections Day 1

Objective

TSW understand concept of reflection

*drawing images after reflection

***find coordinates of points after reflection**



Common Core State Standards

8G1 Verify experimentally the properties of rotations, reflections, and translations.

8G1 a Lines are taken to lines, and line segments to line segments of the same length.

Mathematical Practices *MP3 Construct arguments MP 4 Model Mathematics MP5 Use tools strategically*

Lesson 8.2 Reflections Day 1

8.2 Reflections Day 1

TSW understand concept of reflection
*drawing images after reflection
*find coordinates of points after Reflection

Vocabulary

Line of Reflection

Lesson 8.2 Reflections Day 1

Vocabulary

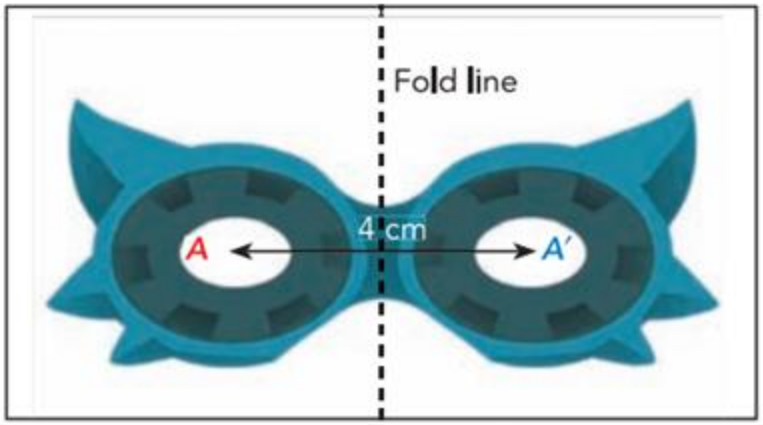
Line of Reflection The given line of a reflection that is the perpendicular bisector of all segments formed by a point and its image

Lesson 8.2 Reflections Day 1

Understand the Concept of a Reflection.

Example 5 Reflect a point.

To make a paper mask, Kathy folds a paper into half and marks a point A for an eyehole. She then cuts through the folded paper at A to make two eyeholes A and A'. If $AA' = 4$ centimeters, find the distance between A and the fold line.



The fold line is the line of reflection. The mask is symmetric about the fold line. The eyeholes are at the same distance from the line of reflection.

Understand the Concept of a Reflection.

Example 5 Reflect a point.

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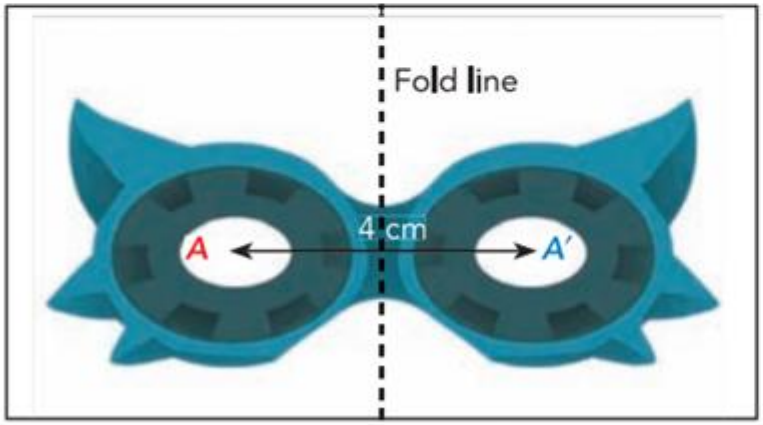


The fold line is the line of reflection. The mask is symmetric about the fold line. The eyeholes are at the same distance from the line of reflection.

Solution

Distance between A and the fold line: $\frac{4}{2} = 2$ cm

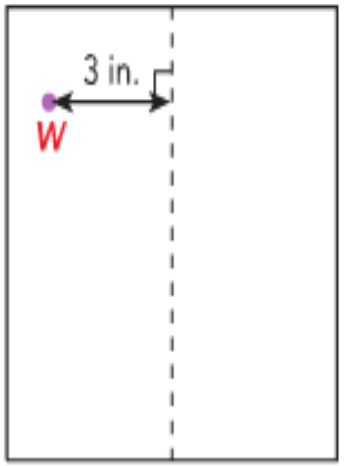
The distance between A and the fold line is 2 centimeters.

Lesson 8.2 Reflections Day 1

Guided Practice

Solve.

1. Andrew wants to hang a square poster on his bedroom wall. He places a picture hanger at W. In order to get the poster to balance properly, he places a second picture hanger at W', with the dotted vertical line as the line of symmetry. If the distance between W and the vertical line is 3 inches, find WW'.



Square Poster

Lesson 8.2 Reflections Day 1

Guided Practice

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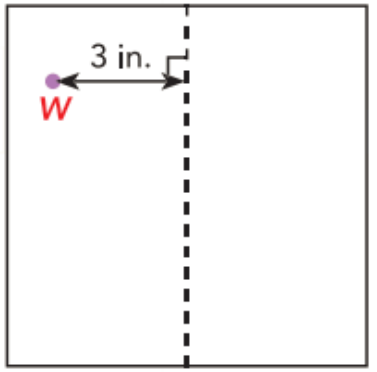


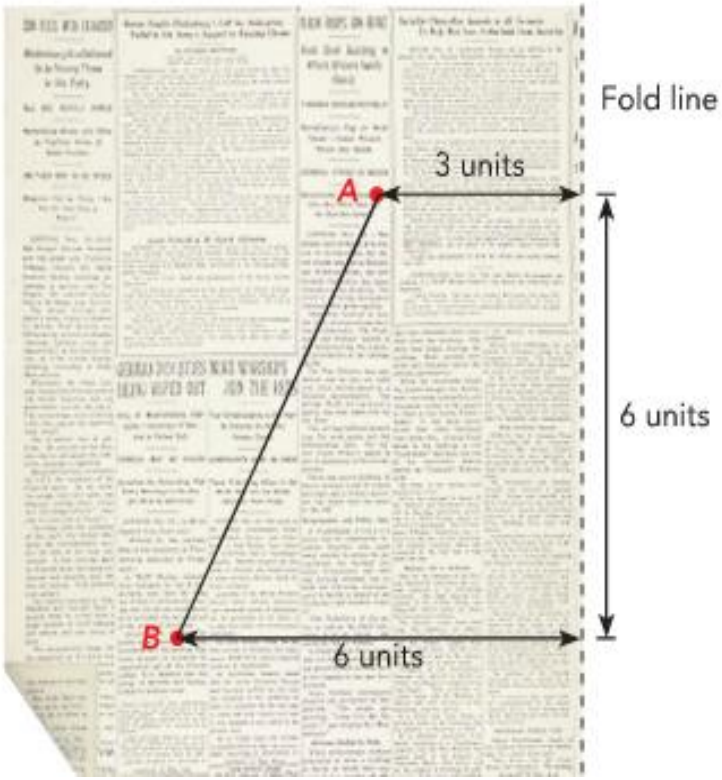
Square Poster

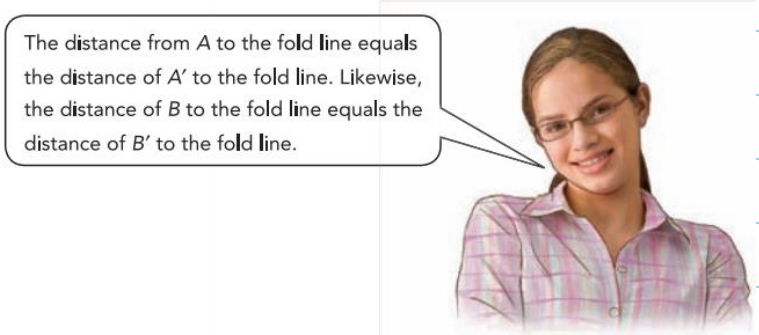
Lesson 8.2 Reflections Day 1

Example 6 Reflect a line segment.

Jayden made a straight cut $\overline{AB}$ on a piece of folded newspaper on two occasions, as shown in the following diagrams. He unfolded the newspaper and saw another cut line $\overline{A'B'}$. Draw and label the two cut lines and the fold line on graph paper.

a)





Lesson 8.2 Reflections Day 1

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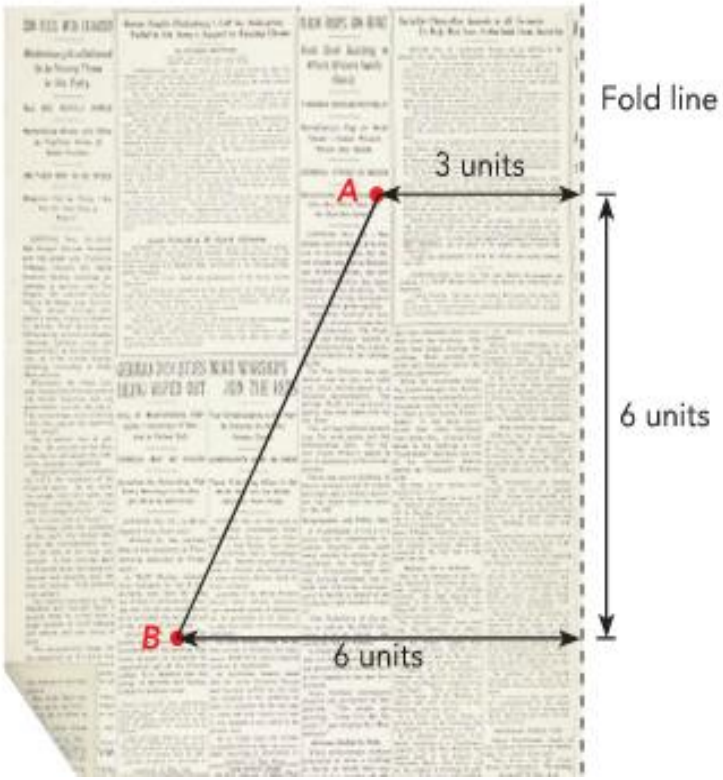
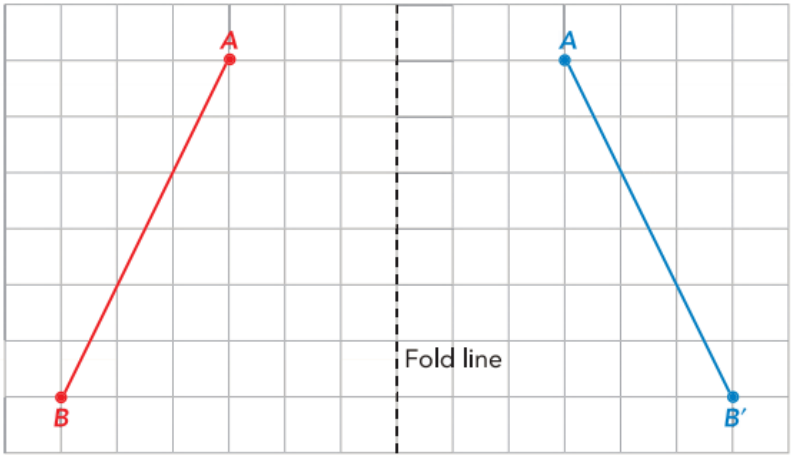
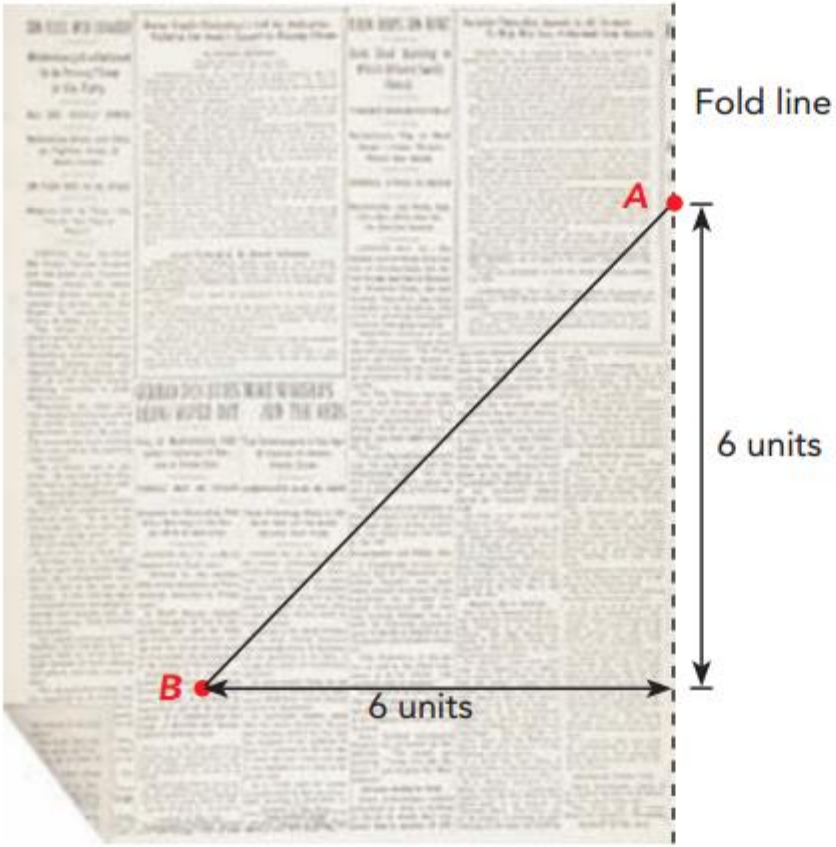


Solution

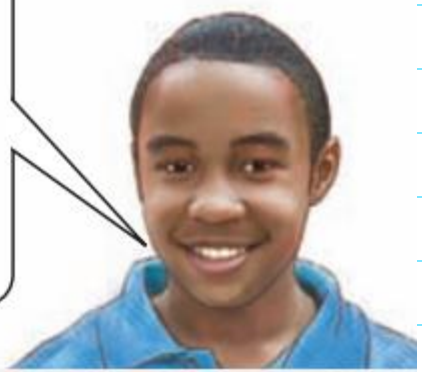


Lesson 8.2 Reflections Day 1

b)

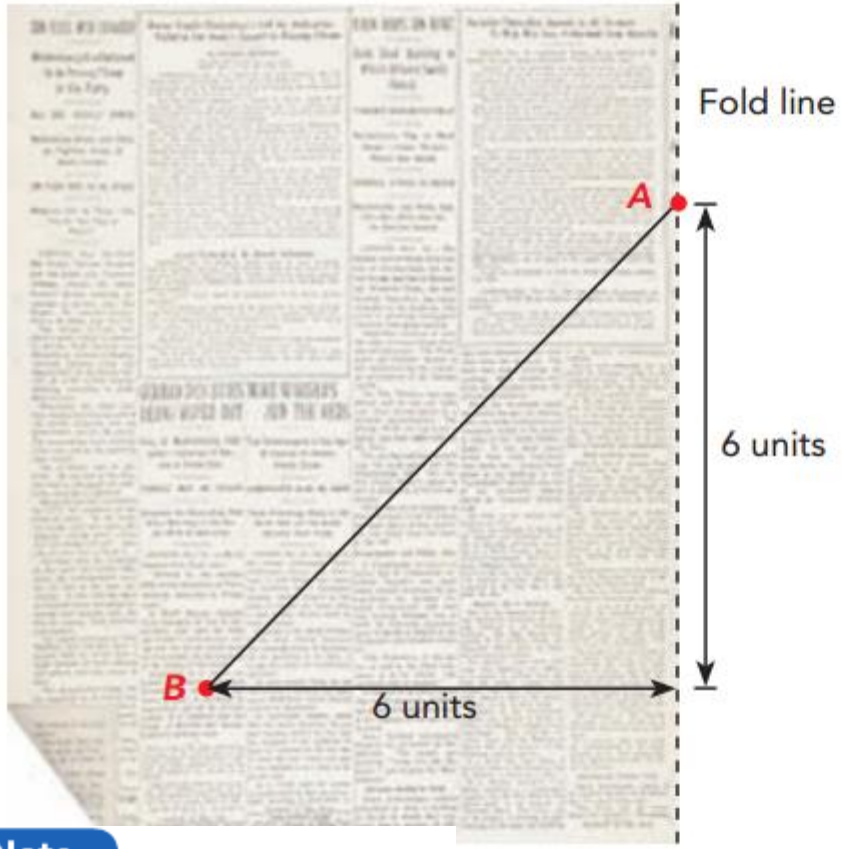


The distance from *B* to the fold line is the length of the perpendicular segment from *B* to the line. It is the shortest distance.

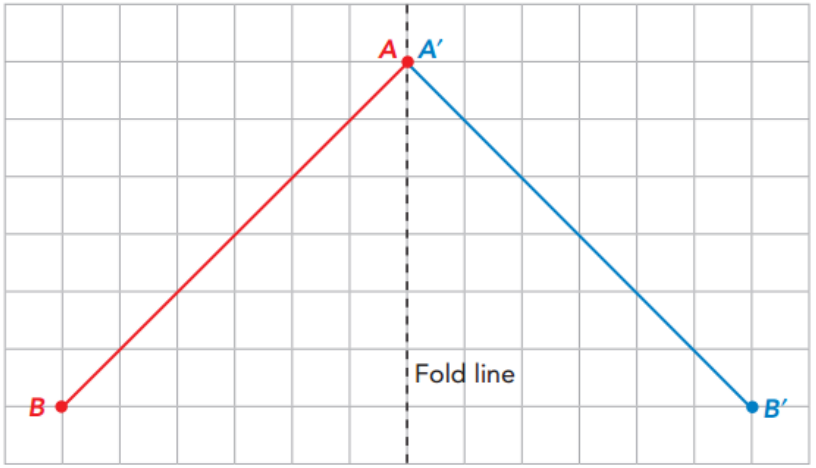


Lesson 8.2 Reflections Day 1

b)



Solution



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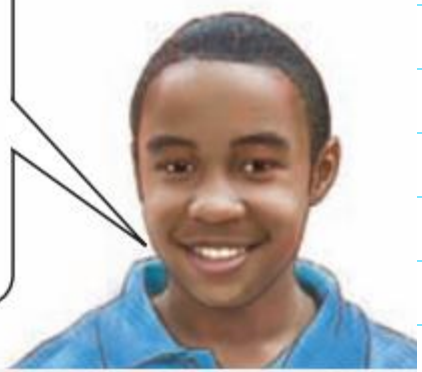


Math Note

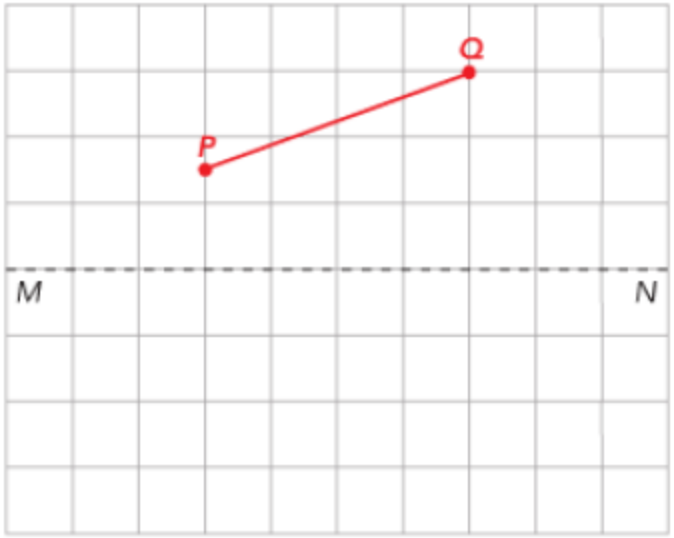
Notice that point *A* is mapped onto itself, that is, points *A* and *A′* are the same point. Point *A* is an invariant point. All points on the line of reflection are invariant, because each one maps onto itself.

Guided Practice

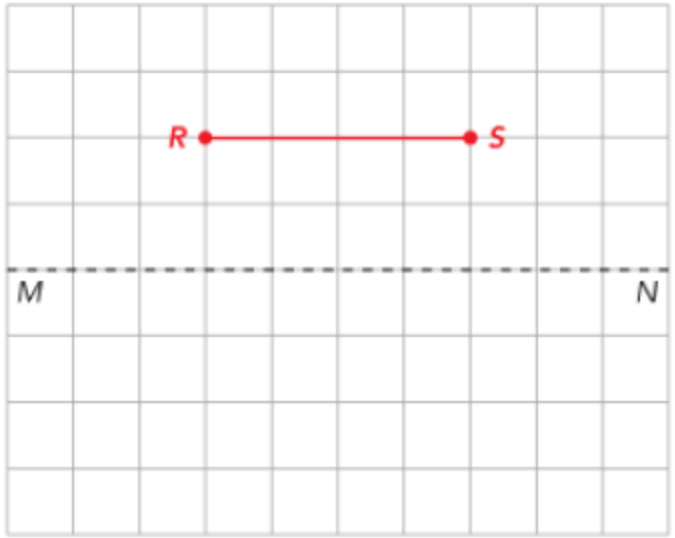
Copy and complete on graph paper.

2 Each line segment is reflected in $\overleftrightarrow{MN}$. On a copy of the diagram, draw and label each image.

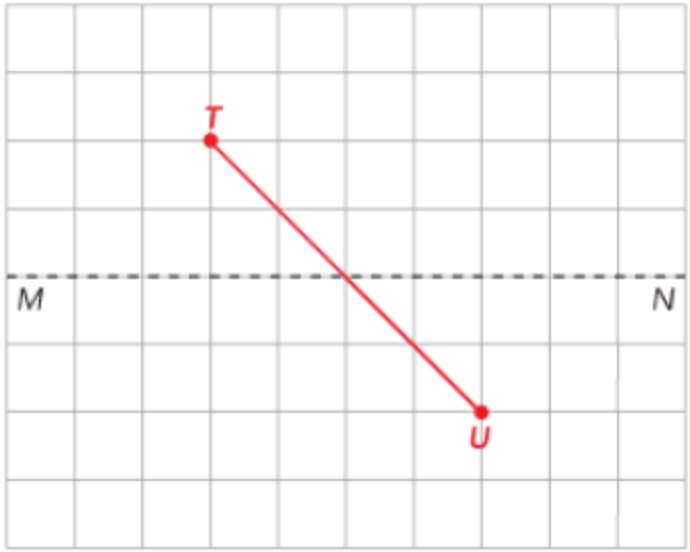
a)



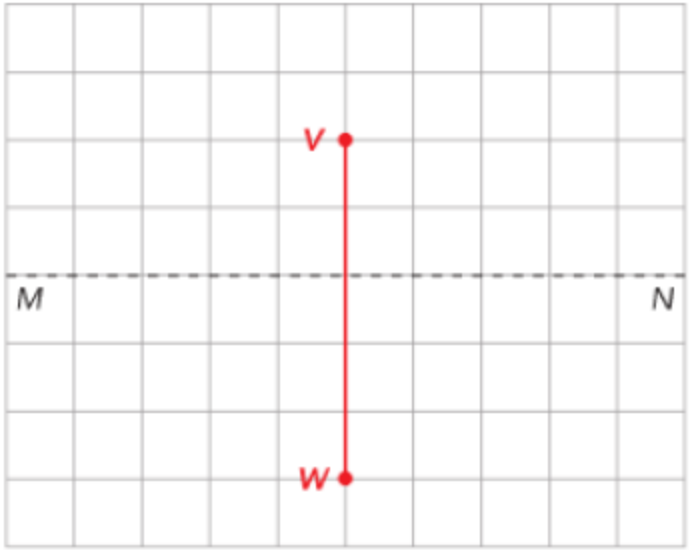
b)



c)



d)



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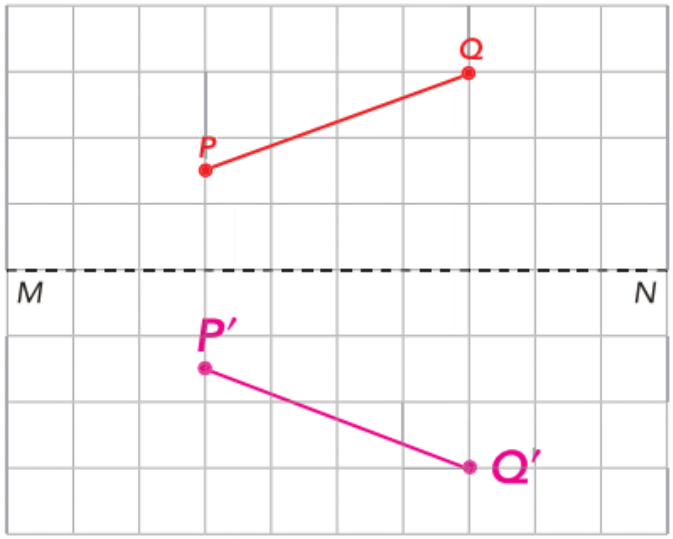

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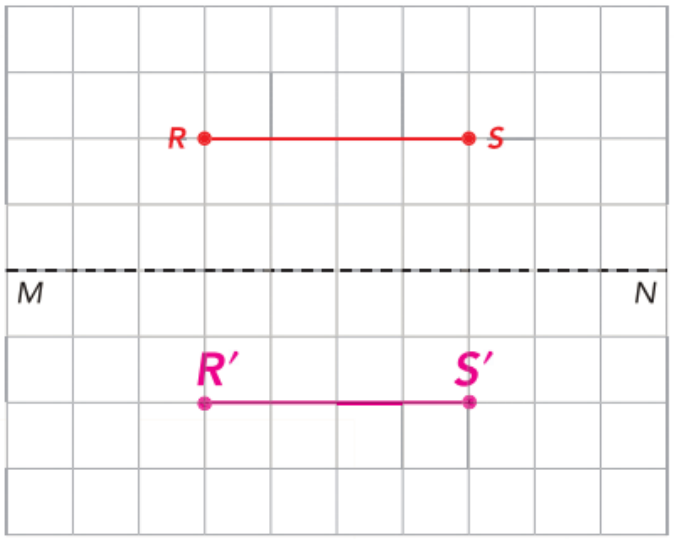

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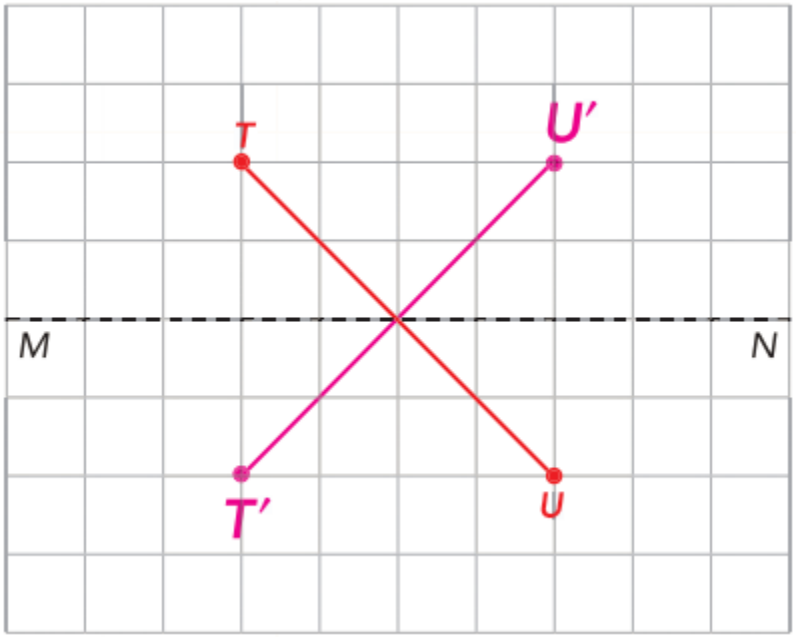

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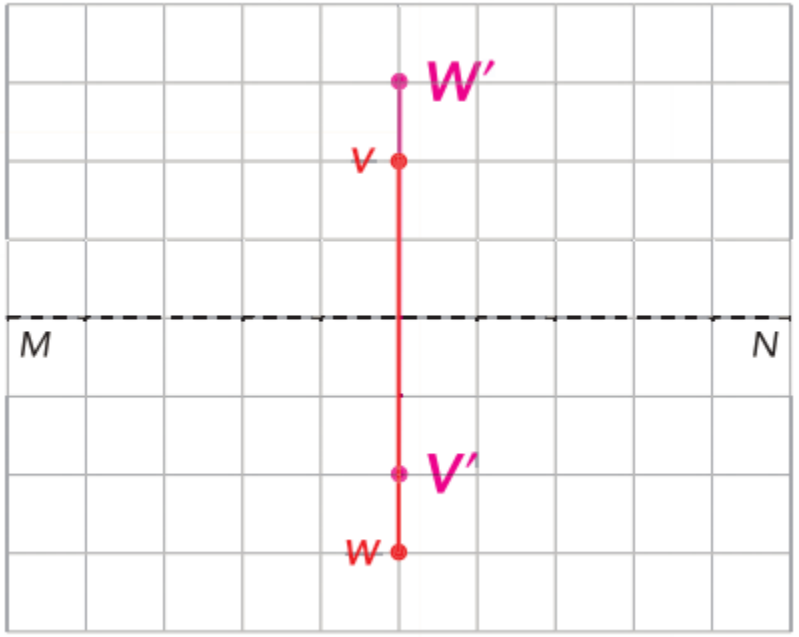
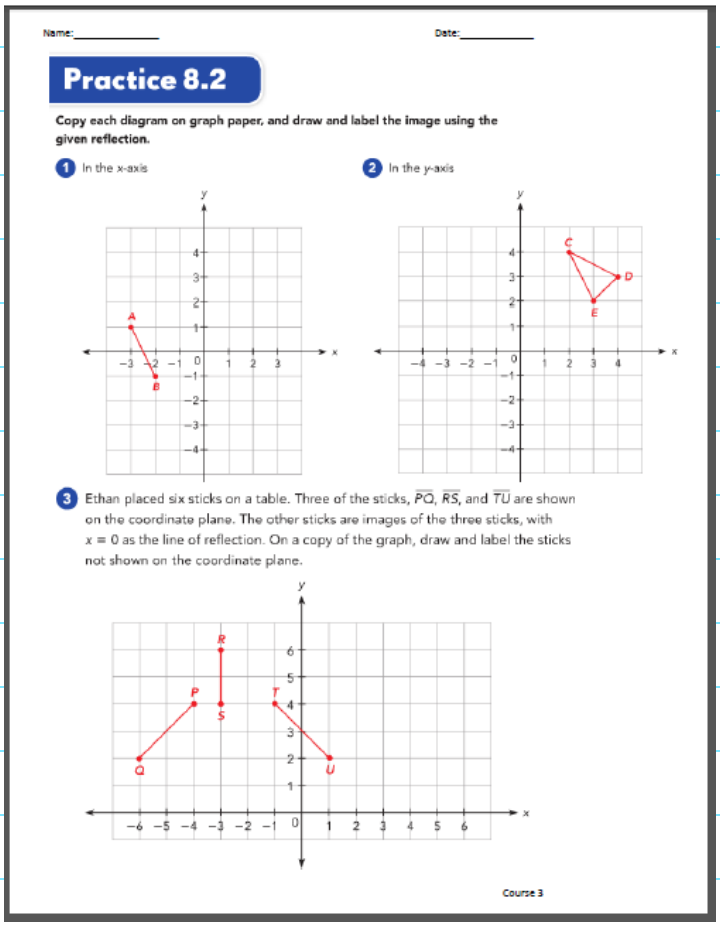


Lesson 8.2 Reflections Day 1

Practice 8.2 #1,3, 6-7



Name:_____ Date:_____

Practice 8.2

Copy each diagram on graph paper, and draw and label the image using the given reflection.

1. In the x-axis

2. In the y-axis

3. Ethan placed six sticks on a table. Three of the sticks, $\overline{PQ}$, $\overline{RS}$, and $\overline{TU}$ are shown on the coordinate plane. The other sticks are images of the three sticks, with $x = 0$ as the line of reflection. On a copy of the graph, draw and label the sticks not shown on the coordinate plane.

Course 3

Challenge-

*#8-9 provide challenge

*Solve created equations

"Pick a Snowflake"

*BuzzMath

Lesson Check #1- can reflect a point and a segment

Lesson 8.2 Reflections Day 1

Ticket Out the Door- Connect, Extend, Challenge

1. How are the ideas and information presented CONNECTED to what you already knew?

2. What new ideas did you get that EXTENDED or pushed your thinking in new directions?

3. What is still CHALLENGING or confusing for you to get your mind around? What questions, wonderings or puzzles do you now have?