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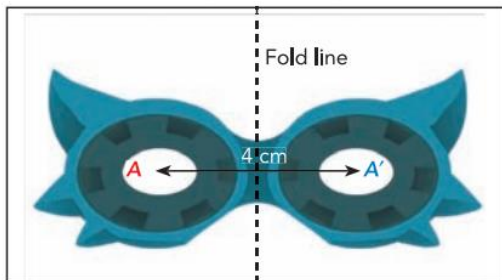**find coordinates of points after
Reflection

Vocabulary- Read pages 66-67
Line of Reflection

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.
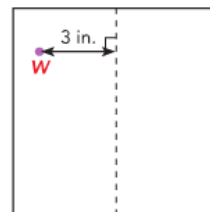
Fold line

A ← 4 cm → A'

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.
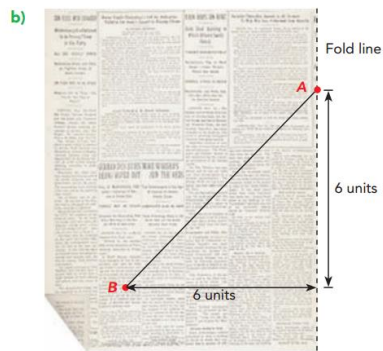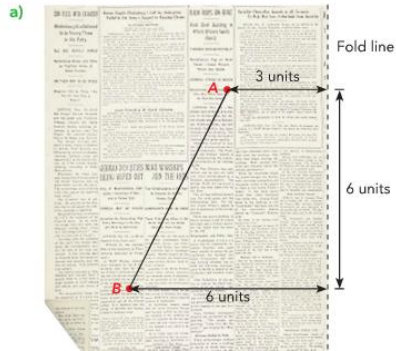
Guided Practice
Solve.

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'.
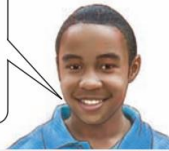
3 in.
W

Square Poster

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)

Fold line

3 units

6 units

6 units

b)

Fold line

6 units

6 units

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.

Guided Practice

Copy and complete on graph paper.

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

a)

b)

c)

d)