INTRO. TO TRANSFORMATIONS

GOAL Identify the three basic rigid transformations.

★ **A _____ is an operation that "maps" (moves) or changes a geometric figure in some way to produce a new figure.**

BIG IDEA #1: Figures in a plane can be:

_____, _____, or _____ to produce new figures.

↓ ↓ ↓

★ **The geometric figure you start with or the "original" is called a: _____.**

★ **The new figure that results from a transformation of a figure is called an: _____.**

_____

Isometry

❶ _____

❷ _____

❸ _____

example: non-example: are all isometries or "rigid" transformations.

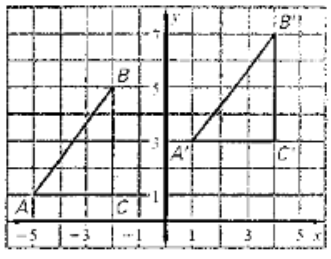
When you name an image, take the corresponding point of the preimage and add a prime symbol. For instance, if the preimage is A, the image is A', read as "A prime."

Example 1.

Triangle ABC is a _____.

Triangle $A'B'C'$ is an _____.

a. Name and describe the transformation.



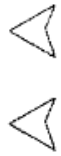
b. Name the coordinates of the vertices of the image.

The coordinates of the vertices of the image, $\triangle A'B'C'$, are $A'(\_\_, \_\_)$, $B'(\_\_, \_\_)$, and $C'(\_\_, \_\_)$.

c. Is $\triangle ABC$ congruent to its image?

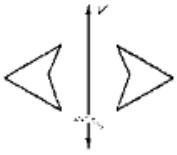
More examples. Describe the transformation.

A.



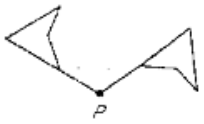
in a straight path

B.



in a vertical line

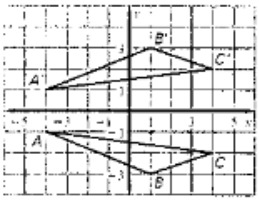
C.



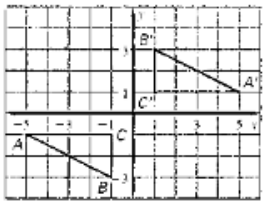
about a point

Checkpoint Name and describe the transformation.

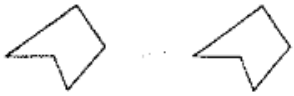
1.



2.

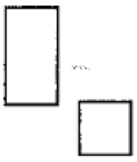


3.

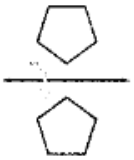


Example 2. Does the transformation appear to be an isometry? If yes, tell which one. If no, explain

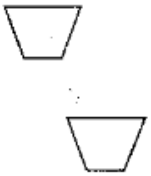
a.



b.



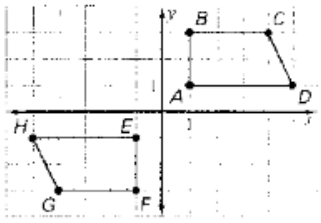
c.



Example 3. **Use the graph of the transformation below. *ABCD* is the preimage.**

a. Figure $ABCD \rightarrow$ Figure _____.

b. Name and describe the transformation.



c. Name the image of $\overline{CD}$.

d. Name the preimage of $\overline{FG}$.

e. Give the ordered pair for the image of point D.

f. Give the ordered pair for the preimage of point G.