

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period 1 3 4 5 6 7

## Translations

In geometry, "Translation" simply means \_\_\_\_\_

To translate a shape:

◆ Every point of the shape must move:

○ \_\_\_\_\_

○ \_\_\_\_\_

### Examples:

1.

2. Translate the image by  $(x - 8, y + 2)$

$A(-2, 4) \rightarrow$

$B(0, -8) \rightarrow$

$C(-3, 5) \rightarrow$

3. Translate the image by  $(2x + 2, y - 3)$

$D(1, 2) \rightarrow$

$E(-3, -5) \rightarrow$

$F(4, -1) \rightarrow$

4.

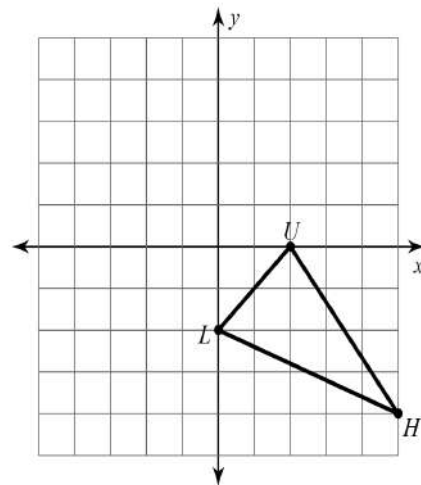
5. Find the pre-image  $(x + 12, y - 17)$

$\rightarrow G'(5, -29)$

$\rightarrow H'(20, -19)$

$\rightarrow I'(21, -4)$

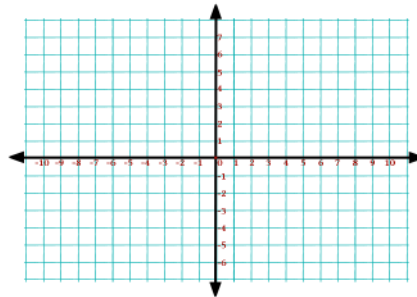
6. translation:  $(x, y) \rightarrow (x - 1, y + 1)$



### Class Practice

1. Given the point P (5, 3) and  $T(x, y) = (x + 2, y + 2)$ , what are the coordinates of T(P)?

2. Given the transformation of a translation  $T(x, y) = (x + 5, y - 3)$ , and the points P (-2, 1) and Q (4, 1), show that the transformation of a translation is isometric by calculating the **distances**, or lengths, of  $\overline{PQ}$  and  $\overline{P'Q'}$ .



$\overline{PQ} =$  \_\_\_\_\_

$\overline{P'Q'} =$  \_\_\_\_\_

3. Translate the image by  $(-x, y + 2)$

A( 2 , 3) →

B ( 1, -5) →

C(-4, 8) →

4. Translate the image by  $(x - 2, -y)$

G(2, -7) →

H(-3, 9) →

I (-6, 11) →

5. Given  $\triangle ABC$ : A(5,2), B(3,5), and C(2,2), and the transformation  $T(x, y) = (x, -y)$ , what are the coordinates of the vertices of  $T(\triangle ABC)$ ?

a. What kind of transformation is T?

