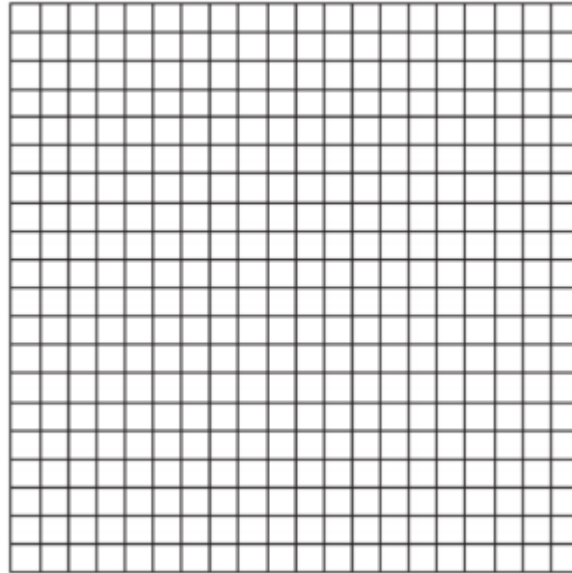


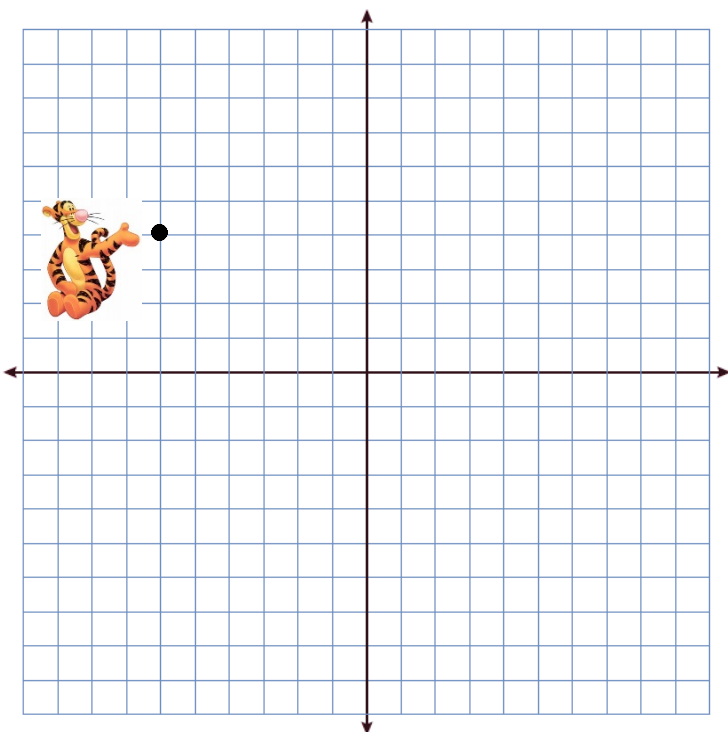
Aim: What is a TRANSLATION?

Do Now: Triangle SUN has coordinates S(0,6), U(3,5), and N(3,0). On the accompanying grid, draw and label SUN. Then, graph and state the coordinates of S 'U 'N ', the image of SUN after a reflection in the y-axis.



Translation

When you tranSLate a figure, you just SLide it around the grid.



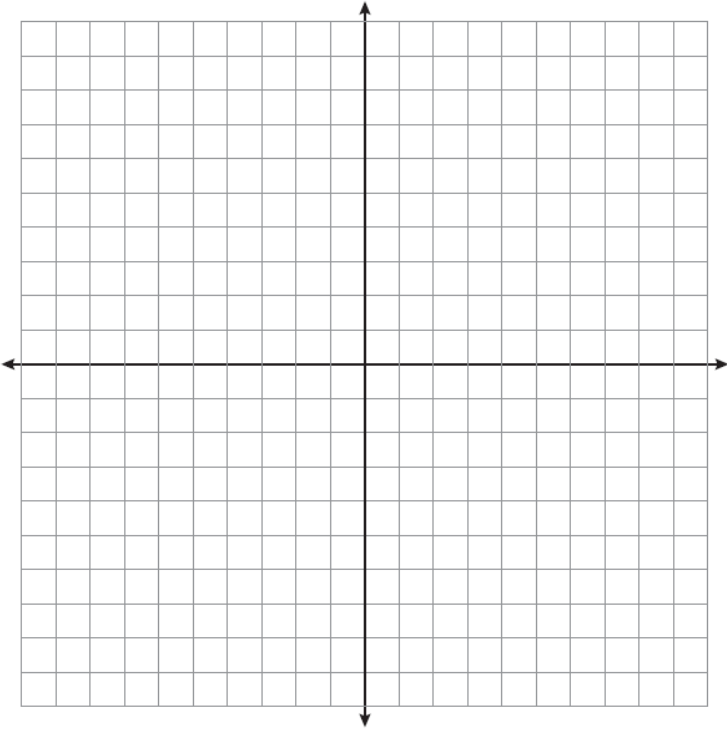
$$(x, y) \rightarrow (x + 9, y - 3)$$

1) When you **translate** a figure, can its shape or size change?

2) $\triangle ABC$ has coordinates: $A(-8, 2)$ $B(-6, 5)$ $C(-1, -3)$.

Graph $\triangle ABC$, and then graph $\triangle A'B'C'$, which is the image of $\triangle ABC$ after the transformation defined by:

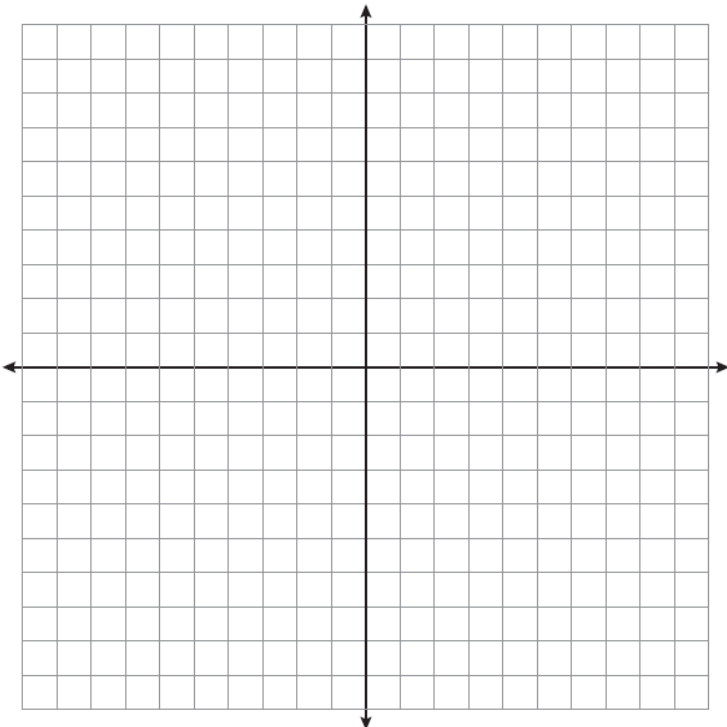
$$(x, y) \rightarrow (x + 7, y - 6)$$



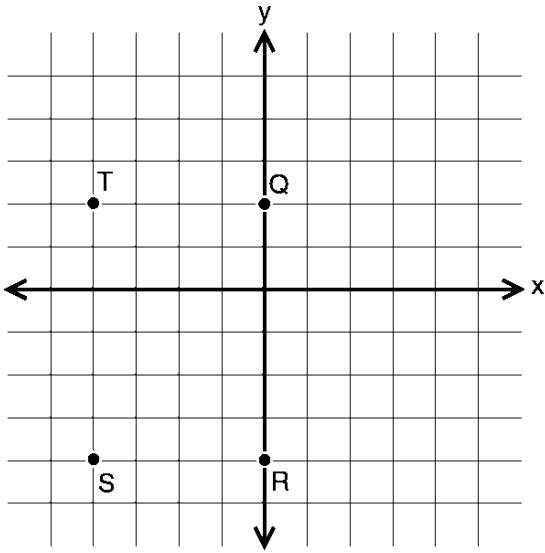
3) $\triangle DEF$ has coordinates: $D(2, 1)$ $E(8, -3)$ $F(5, 6)$.

Graph $\triangle DEF$, and then graph $\triangle D'E'F'$, which is the image of $\triangle DEF$ after the transformation defined by:

$$(x, y) \rightarrow (x - 2, y - 3)$$



4) If $x = -2$ and $y = -1$, which point on the accompanying set of axes represents the translation $(x,y) \rightarrow (x + 2, y - 3)$?



- (1) Q
- (2) R

- (3) S
- (4) T

5) A translation moves $A(2, 5)$ to $A'(3, 10)$. What are the coordinates of the image of point $(1, 7)$ under the same translation?

6) A translation moves $B(20, 30)$ to $B'(10, 27)$. What are the coordinates of the image of point $(3, 8)$ under the same translation?

7) A translation moves $C(4, 13)$ to $C'(-5, 15)$. What are the coordinates of the image of point $(1, -4)$ under the same translation?

8) A translation moves $D(-4, 11)$ to $D'(32, -12)$. What are the coordinates of the image of point $(-2, 7)$ under the same translation?