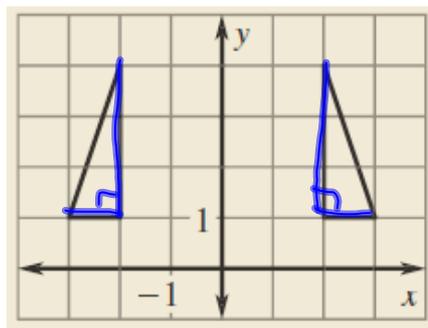


Warm Up

1. For $A(2, 7)$ and $B(7, -5)$, find the length of \overline{AB}
2. What point is six units to the right and one unit up from $(3, 5)$?

3. Are these triangles congruent?
If so, how do you know?

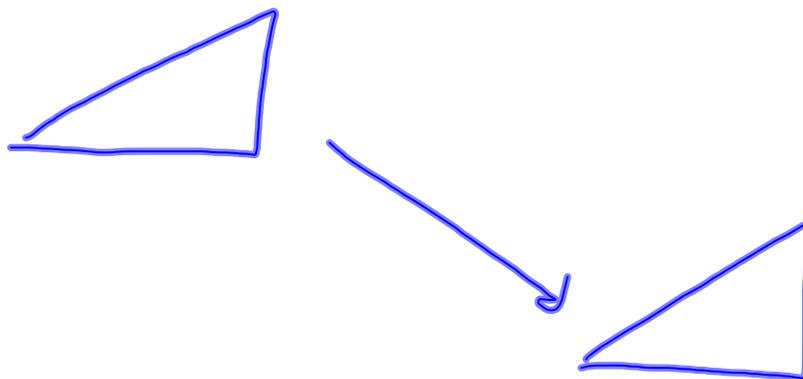


4-8 Congruence Transformations

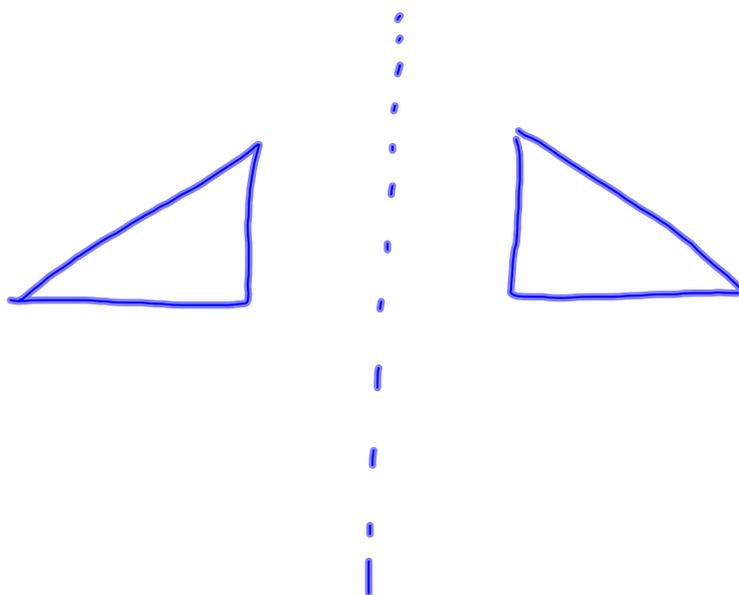
transformation — moving or changing
a figure to create a
new figure

image — new figure

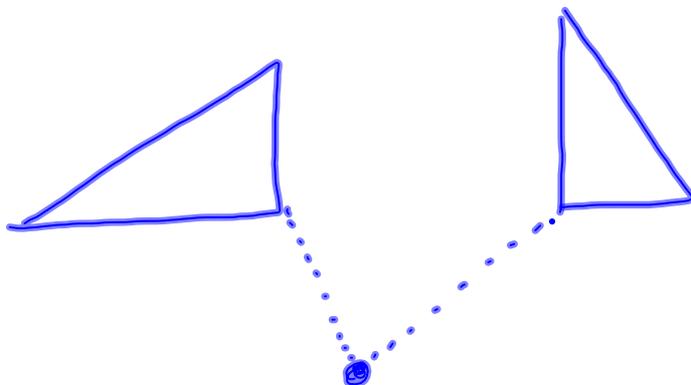
translation — moving every point of a figure the same distance + the same direction



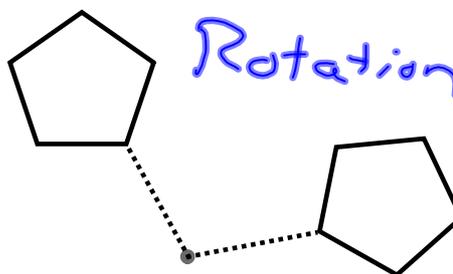
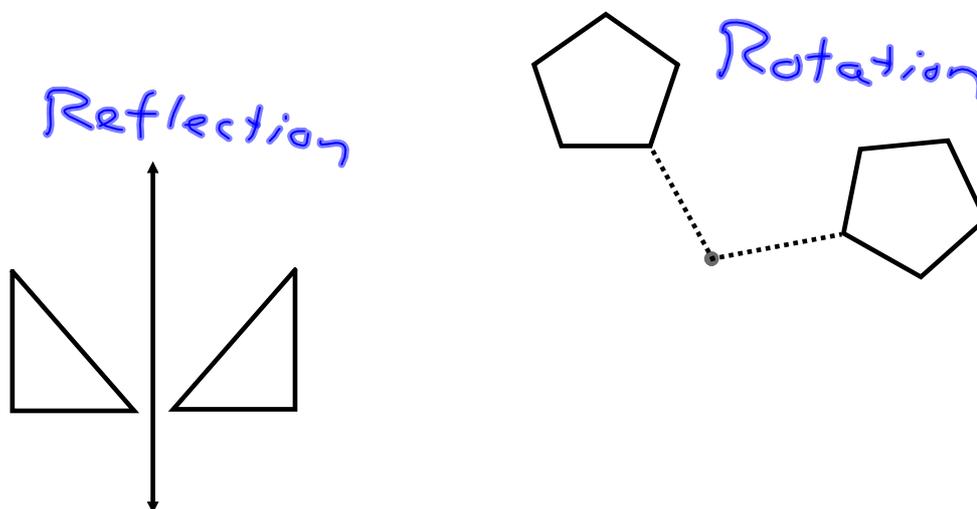
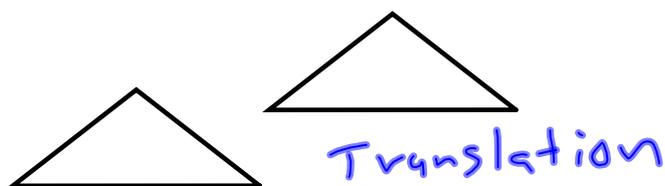
reflection — flipping a figure across a line of reflection



rotation — turning a figure around
the center of rotation



Ex 1 Name the type of transformation demonstrated in each picture.



Ex. 2 Describe the translation in words.

$$(x, y) \longrightarrow (x + 7, y - 5)$$

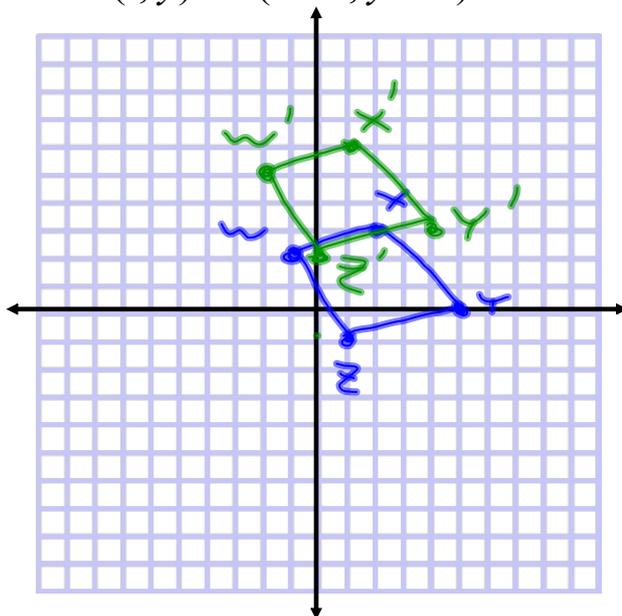
Translate the figure
7 units right, 5 units down

Ex. 3 Use coordinate notation to describe the translation.

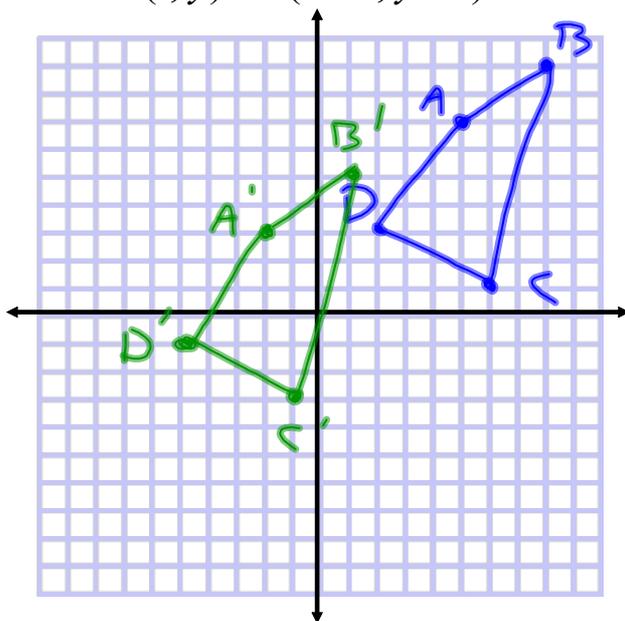
3 units left, 4 units up

$$(x, y) \longrightarrow (x - 3, y + 4)$$

- Ex 4 Figure $WXYZ$ has vertices $W(-1, 2)$, $X(2, 3)$, $Y(5, 0)$, and $Z(1, -1)$. Sketch $WXYZ$ and its image after the translation $(x, y) \rightarrow (x - 1, y + 3)$.



- Ex 5 Figure $ABCD$ has vertices $A(5, 7)$, $B(8, 9)$, $C(6, 1)$, and $D(2, 3)$. Sketch $ABCD$ and its image after the translation $(x, y) \rightarrow (x - 7, y - 4)$.



Ex 6 Graph \overline{PQ} and \overline{RS} . Tell whether \overline{RS} is a rotation of \overline{PQ} about the origin. If so, give the angle and direction of rotation.

$$P(4, 2) \quad Q(5, 1)$$

$$R(-2, 4) \quad S(-1, 5)$$

Yes
90°
counterclockwise

