

Name _____ Date _____

Graphing Transformations (pages 464–467)

Translations and reflections are **transformations**, or movements of a figure.

<p>Translations and Reflections</p>	<ul style="list-style-type: none"> • A translation slides a figure from one location to another. The new figure is called the translation image. The translation of triangle ABC is called triangle $A'B'C'$ (you say “A prime, B prime, C prime”). • A reflection flips a figure over a line to form a reflection image. You can also name the reflection image with $A'B'C'$.
--	--

EXAMPLES

A When you translate, or slide, the point $Q(3, 4)$ to a new position 2 units down, what are the coordinates of Q' ?

When you move a point down, you change the y-coordinate. Q' is $(3, 2)$.

B When you reflect, or flip, point $C(-2, 5)$ over the y -axis, what are the coordinates of C' ?

When you flip a point over the y -axis, you change the x -coordinate, because you change whether the point is right or left of the origin. C' is $(2, 5)$.

Try These Together

1. What is the translation image of $S(3, -1)$ that is 2 units left and 4 up?

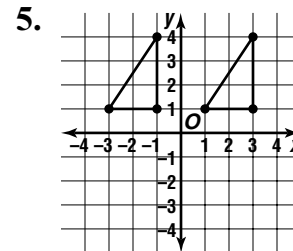
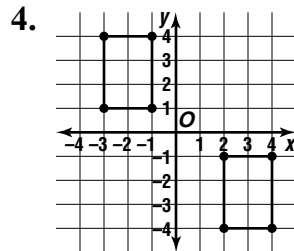
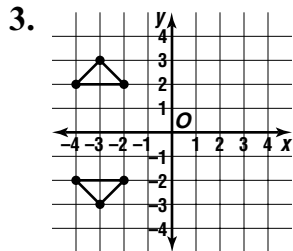
HINT: Graph S and move it. Then find the coordinates of S' .

2. What is the reflection image of $T(2, -7)$ when you flip it over the x -axis?

HINT: A flip over the x -axis changes which side of the x -axis the point is on, so the y -coordinate will change.

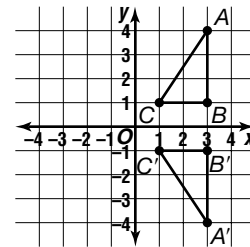
PRACTICE

Tell whether each transformation is a translation or a reflection.



6. **Standardized Test Practice** What can you say about $\triangle ABC$ and $\triangle A'B'C'$?

- A** $\triangle A'B'C'$ is a reflection of $\triangle ABC$.
- B** $\triangle A'B'C'$ is a translation of $\triangle ABC$.
- C** $\triangle A'B'C'$ is not a transformation of $\triangle ABC$.
- D** They are not related.



Answers: 1. $S'(1, 3)$ 2. $T'(2, 7)$ 3. reflection 4. translation 5. translation 6. A