

## 8.4 Rotations Day 2

TSW understand concept of dilation

\*drawing images after dilation

**\*find coordinates of points after dilation**

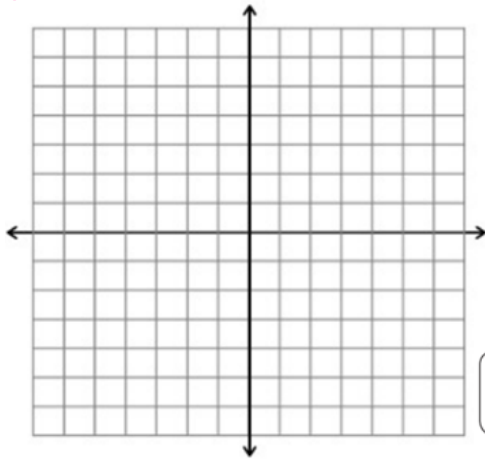
\*find the center of dilation

### Draw Images After Dilations.

Draw  $\triangle ABC$  and each of its images on a coordinate plane.

$\triangle ABC$  has coordinates  $A(1, 1)$ ,  $B(2, 1)$ , and  $C(1, 2)$ . It is transformed by each of the following dilations with their centers at the origin,  $O$ .

a)  $\triangle ABC$  is mapped onto  $\triangle A'B'C'$  by a dilation with scale factor 3.

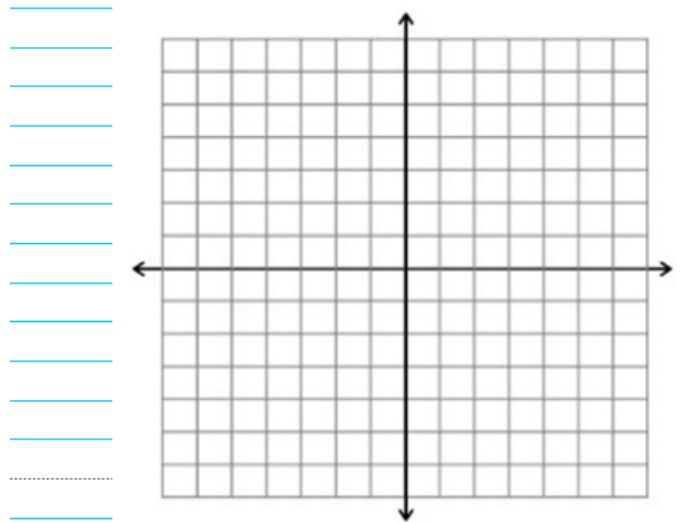


First draw a line from  $O$  to  $A$ .  
Then extend the length of the line 3 times to point  $A'$ . You find points  $B'$  and  $C'$  in the same way.

Check that each side length of  $\triangle A'B'C'$  is 3 times the corresponding side length of  $\triangle ABC$ .



b)  $\triangle ABC$  is mapped onto  $\triangle A''B''C''$  by a dilation with scale factor  $-1$ .



### Guided Practice

Copy and complete on graph paper.

- 3 The management of a swimming pool built a springboard above the pool. The height of the springboard is a dilation of the depth of the pool with center at the origin,  $O$ , and scale factor  $-\frac{1}{3}$ .

The depth of the pool is 4.5 meters, represented by  $\overline{ST}$  on the coordinate plane. The floor is represented by the positive  $x$ -axis and the surface of the water is represented by the negative  $x$ -axis. Draw the location and height of the stand for the springboard,  $\overline{UV}$ , on a copy of this vertical cross section of the pool.

