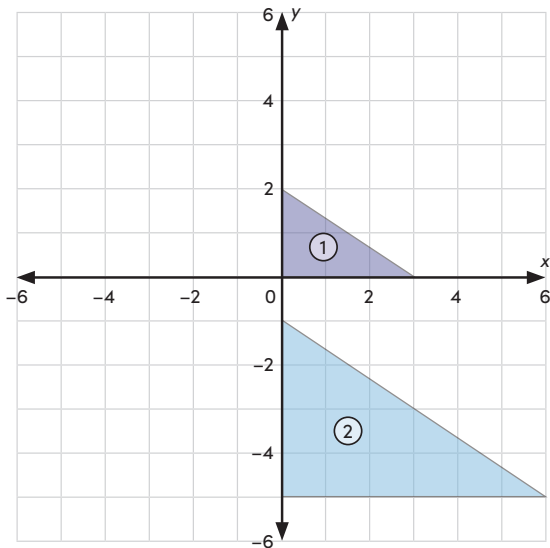# Identify Similar Figures Using Transformations

Similar figures are the same shape but not necessarily the same size. If two figures are similar, you can map one figure onto the other using one or more of the following transformations: **translations**, **reflections**, **rotations**, and **dilations**.
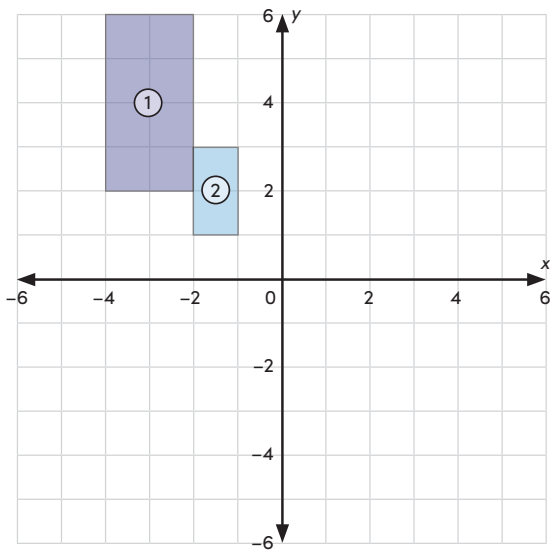

For example, figure 1 and figure 2 are similar.

Figure 1 can be mapped onto figure 2 by a dilation with a scale factor of 2, centered at the origin, and then a translation 5 units down.

Try it! Determine if the figures on each coordinate plane are similar or not similar. Write your answer below, and explain your reasoning. If the figures are similar, describe transformations that map figure 1 onto figure 2. **Explanations may vary.**
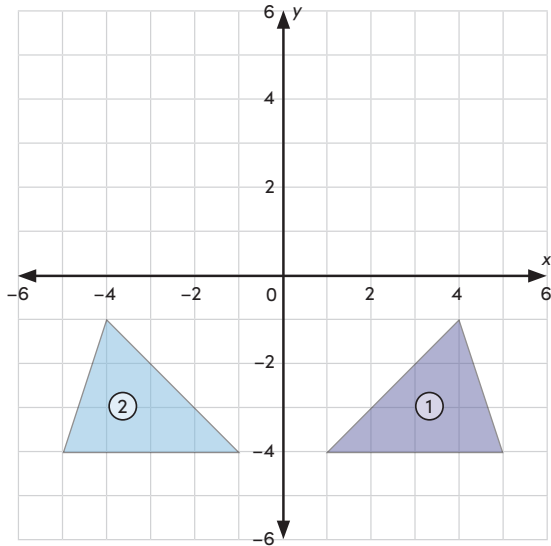

The figures are similar. Figure 1 can be mapped onto figure 2 by a dilation with a scale factor of $\frac{1}{2}$, centered at the origin.
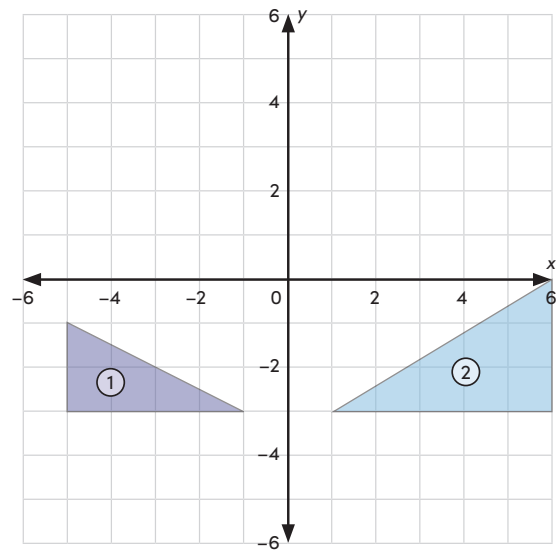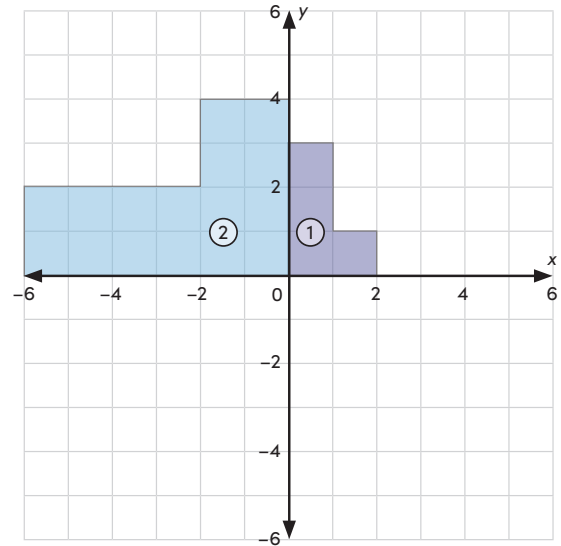
The figures are not similar. Figure 1 cannot be mapped onto figure 2 using translations, reflections, rotations, and dilations.

Identify Similar Figures Using Transformations

Keep going! Determine if the figures on each coordinate plane are similar or not similar. Write your answer below, and explain your reasoning. If the figures are similar, describe transformations that map figure 1 onto figure 2. **Explanations may vary.**
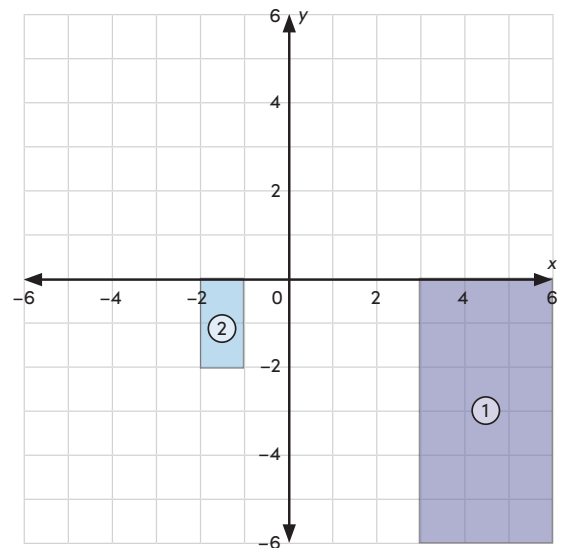

The figures are similar. Figure 1 can be mapped onto figure 2 by a reflection over the y-axis.

The figures are similar. Figure 1 can be mapped onto figure 2 by a rotation 90° counterclockwise around the origin and a dilation with a scale factor of 2, centered at the origin.
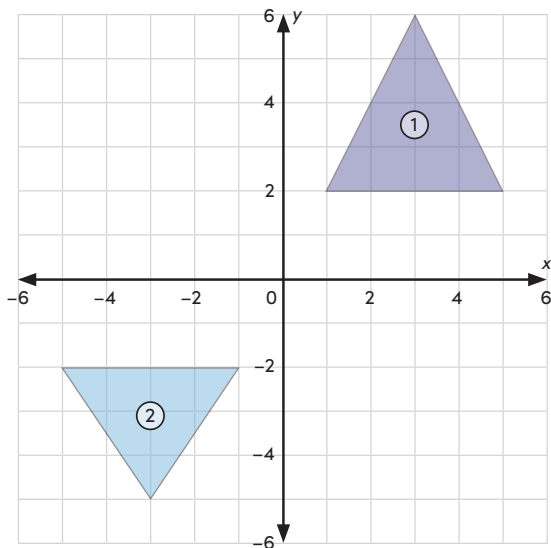
The figures are not similar. Figure 1 cannot be mapped onto figure 2 using translations, reflections, rotations, and dilations.

The figures are similar. Figure 1 can be mapped onto figure 2 by a dilation with a scale factor of $\frac{1}{3}$, centered on the origin, and a translation 3 units to the left.

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