Describe any rotational or line symmetry for each figure in the coordinate plane.
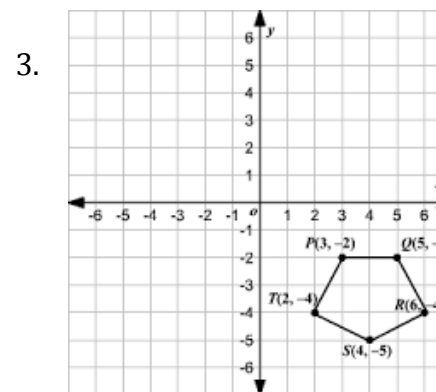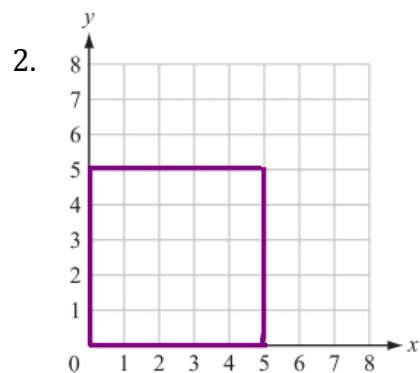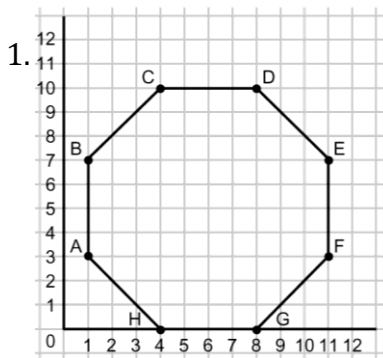
1.

2.

3.

1. Find a sequence of transformations that maps one figure to the other.
2. Write a congruency statement (i.e. $\triangle ABC \cong DEF$). Order of the letters matters!
3. Identify congruent parts.

4.

5.

6.

7.
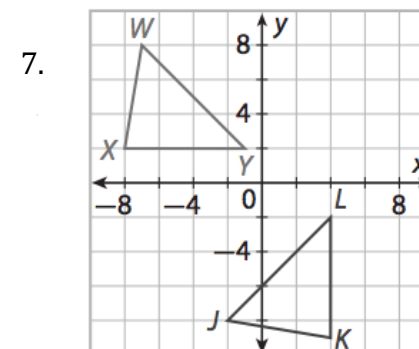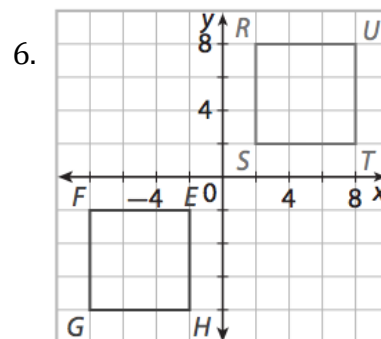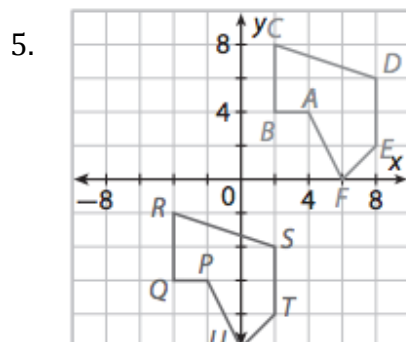
1. Find a sequence of transformations that maps one figure to the other.
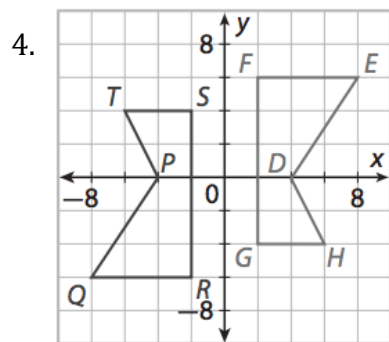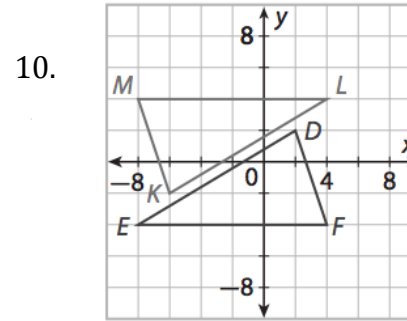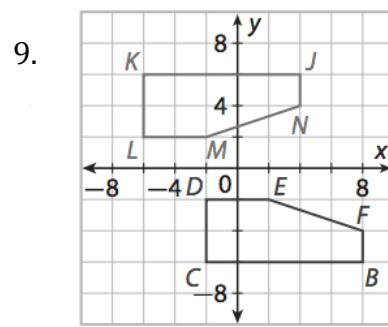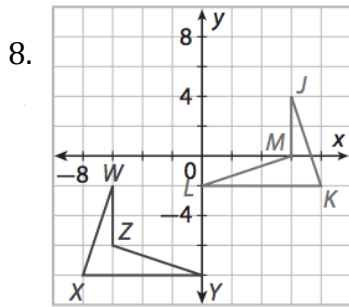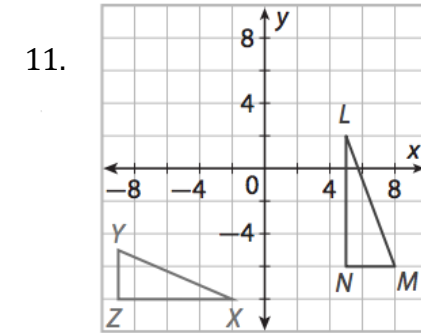2. Write a congruency statement (i.e. $\triangle ABC \cong DEF$). Order of the letters matters!
3. Identify congruent parts.

Challenge!

8.

9.

10.

11.

12. **Draw Conclusions** Two students are trying to show that the two figures are congruent. The first student decides to map *CDEFG* to *PQRST* using a rotation of 180° around the origin, followed by the translation $(x, y) \rightarrow (x, y + 6)$. The second student believes the correct transformations are a reflection across the *y*-axis, followed by the vertical translation $(x, y) \rightarrow (x, y - 2)$. Are both students correct, is only one student correct, or is neither student correct?
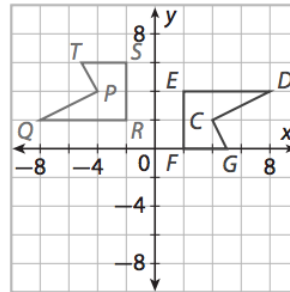
13. Which sequence of transformations does not map a figure onto a congruent figure? Explain.

A. Rotation of 180° about the origin, reflection across the *x*-axis, horizontal translation $(x, y) \rightarrow (x + 4, y)$

B. Reflection across the *y*-axis, combined translation $(x, y) \rightarrow (x - 5, y + 2)$

C. Rotation of 180° about the origin, reflection across the *y*-axis, dilation $(x, y) \rightarrow (2x, 2y)$

D. Counterclockwise rotation of 90° about the origin, reflection across the *y*-axis, combined translation $(x, y) \rightarrow (x - 11, y - 12)$