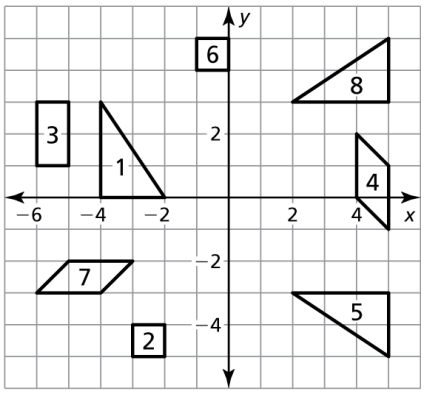
Name _____ Date _____

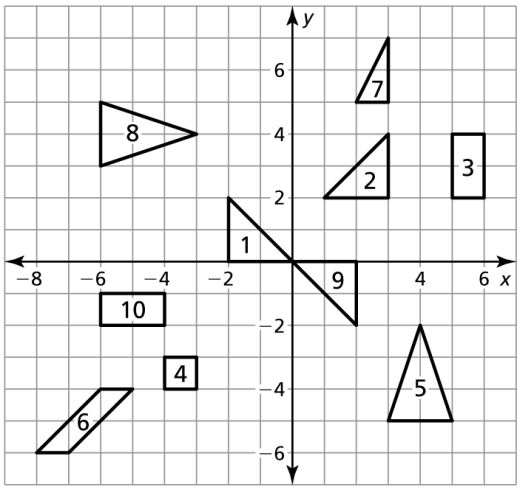
4.4 Practice A

In Exercises 1 and 2, identify any congruent figures in the coordinate plane. Explain.

1.

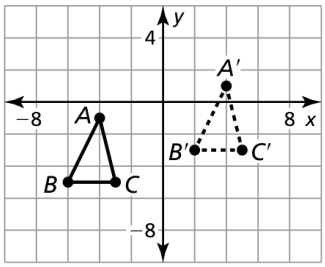


2.

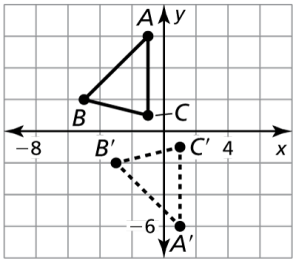


In Exercises 3 and 4, describe a congruence transformation that maps $\triangle ABC$ to $\triangle A'B'C'$.

3.



4.

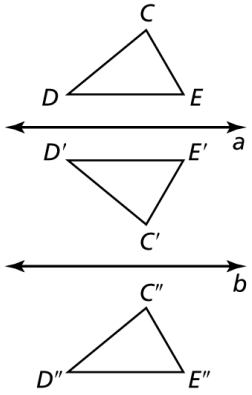


In Exercises 5 and 6, determine whether the polygons with the given vertices are congruent. Use transformations to explain your reasoning.

5. $A(5, 2)$, $B(2, 2)$, $C(2, 7)$ and $S(-4, -5)$, $T(-1, -5)$, $U(-1, 0)$

6. $E(6, -2)$, $F(10, -2)$, $G(10, -8)$ and $W(4, 8)$, $X(4, 10)$, $Y(8, 10)$, $Z(8, 8)$

7. In the figure, $a \parallel b$, $\triangle CDE$ is reflected in line a, and $\triangle C'D'E'$ is reflected in line b. List three pairs of segments that are parallel to each other. Then determine whether any segments are congruent to $\overline{EE''}$.



In Exercises 8 and 9, find the measure of the acute or right angle formed by intersecting lines so that P can be mapped to P'' using two reflections.

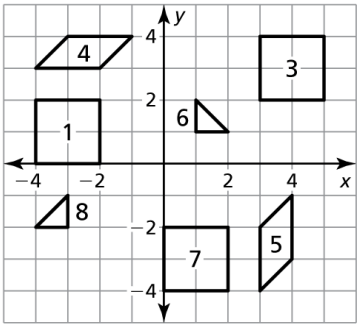
8. A rotation of $28°$ maps P to P''.

9. The rotation $(x, y) \rightarrow (-y, x)$ maps P to P''.

Name_____ Date _____

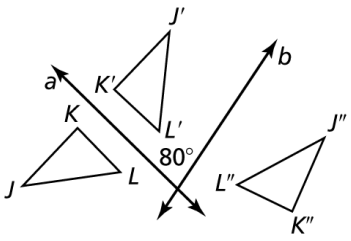
4.4 Practice B

1. Identify any congruent figures in the coordinate plane. Explain.



2. Determine whether the polygons with the vertices $A(0, 6)$, $B(8, 6)$, $C(6, 2)$, $D(2, 2)$ and $P(-3, -4)$, $Q(-7, -4)$, $R(-1, -8)$, $S(-5, -8)$ are congruent. Use transformations to explain your reasoning.

In Exercises 3–5, $\triangle JKL$ is reflected in line *a*, and $\triangle J'K'L'$ is reflected in line *b*.



3. $\overline{JK}$ is perpendicular to line *a* and has a length of 3 units, and vertex *K* is 1 unit from line *a*. Find the distance $\overline{JJ'}$.

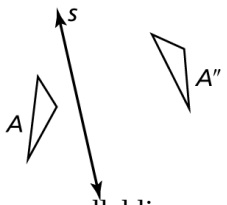
4. Find the angle of rotation that maps $\triangle JKL$ onto $\triangle J''K''L''$.

5. Is $\overline{JK}$ parallel to $\overline{J''K''}$? Explain your reasoning.

6. The rotation $(x, y) \rightarrow (y, -x)$ maps P and P'. Find the measure of the acute or right angle formed by intersecting lines so that P can be mapped to P' using two reflections.

7. Is it *always*, *sometimes*, or *never* true that the composition of two reflections results in the same image as a translation? Explain your reasoning.

8. $\triangle A$ is reflected in line *s* to form $\triangle A'$ and then reflected in line *t* to form $\triangle A''$. Draw line *t* and intermediate $\triangle A'$ to complete the figure that represents these transformations.



9. Your friend claims that if you have a series of many parallel lines, reflecting a figure in two of the lines will produce the same result as reflecting the image in four or six of the lines. Is your friend correct? Explain your reasoning.