9.2 Independent Practice

CA CC 8.G.1, 8.G.3

The graph shows four right triangles. Use the graph for Exercises 4–7.
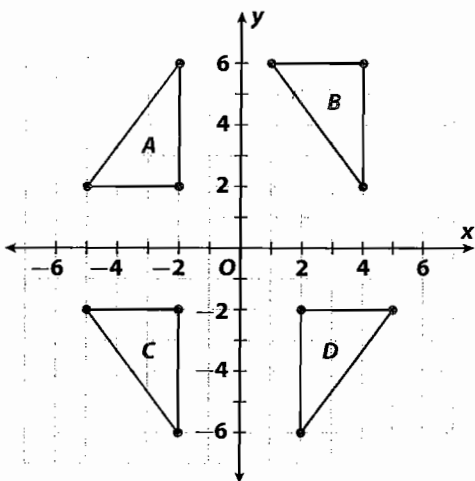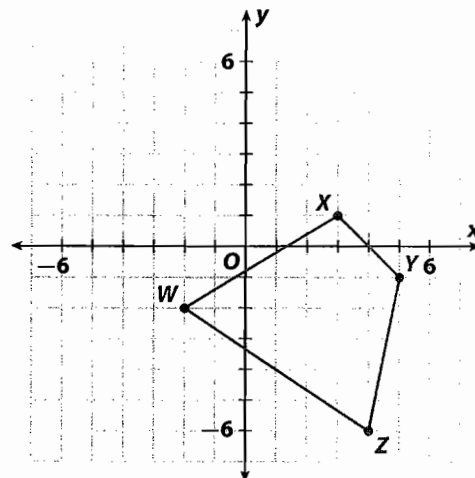

4. Which two triangles are reflections of each other across the *x*-axis?

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5. For which two triangles is the line of reflection the *y*-axis?

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6. Which triangle is a translation of triangle *C*? How would you describe the translation?

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7. Which triangles are congruent? How do you know?

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8. a. Graph quadrilateral *WXYZ* with vertices $W(-2, -2)$, $X(3, 1)$, $Y(5, -1)$, and $Z(4, -6)$ on the coordinate grid.

b. On the same coordinate grid, graph quadrilateral *W'X'Y'Z'*, the image of quadrilateral *WXYZ* after a reflection across the *x*-axis.

c. Which side of the image is congruent to side $\overline{YZ}$?

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Name three other pairs of congruent sides.

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d. Which angle of the image is congruent to $\angle X$?

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Name three other pairs of congruent angles.

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9. Critical Thinking Is it possible that the image of a point after a reflection could be the same point as the preimage? Explain.

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10. a. Graph the image of the figure shown after a reflection across the *y*-axis.

   b. On the same coordinate grid, graph the image of the figure you drew in part **a** after a reflection across the *x*-axis.

   c. Make a Conjecture What other sequence of transformations would produce the same final image from the original preimage? Check your answer by performing the transformations. Then make a conjecture that generalizes your findings.

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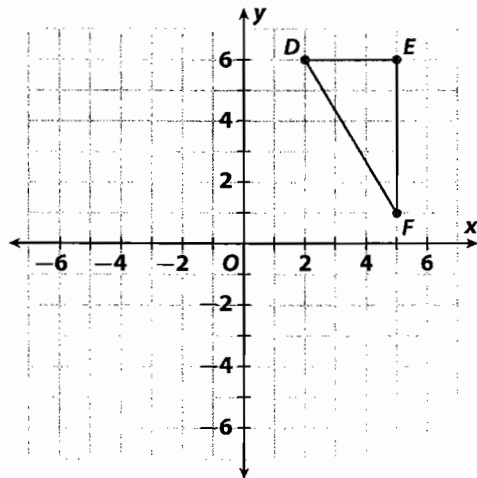_____

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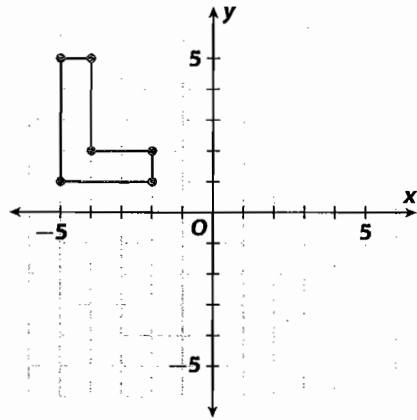
11. a. Graph triangle *DEF* with vertices *D*(2, 6), *E*(5, 6), and *F*(5, 1) on the coordinate grid.

   b. Next graph triangle *D'E'F'*, the image of triangle *DEF* after a reflection across the *y*-axis.

   c. On the same coordinate grid, graph triangle *D"E"F"*, the image of triangle *D'E'F'* after a translation of 7 units down and 2 units to the right.

   d. Analyze Relationships Find a different sequence of transformations that will transform triangle *DEF* to triangle *D"E"F"*.

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