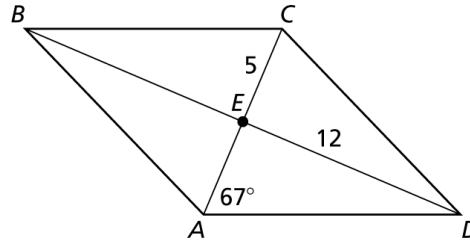


# 7.4

## Practice A

In Exercises 1–5, the diagonals of rhombus  $ABCD$  intersect at  $E$ . Given that  $m\angle EAD = 67^\circ$ ,  $CE = 5$ , and  $DE = 12$ , find the indicated measure.

1.  $m\angle AED$
2.  $m\angle ADE$
3.  $m\angle BAE$
4.  $AE$
5.  $BE$



In Exercises 6 and 7, find the lengths of the diagonals of rectangle  $JKLM$ .

- |   |   |
|---|---|
| <p>6. <math>JL = 3x + 4</math><br/><math>KM = 4x - 1</math></p> | <p>7. <math>JL = 2x - 6</math><br/><math>KM = \frac{3}{2}x + 1</math></p> |
|---|---|

In Exercises 8 and 9, decide whether quadrilateral  $WXYZ$  is a rectangle, a rhombus, or a square. Give all names that apply. Explain your reasoning.

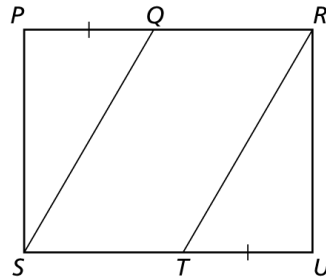
- |   |   |
|---|---|
| <p>8. <math>W(3, 1), X(3, -2), Y(-5, -2), Z(-5, 1)</math></p> | <p>9. <math>W(4, 1), X(1, 4), Y(-2, 1), Z(1, -2)</math></p> |
|---|---|

10. Use the figure to write a two-column proof.

**Given:**  $PSUR$  is a rectangle.

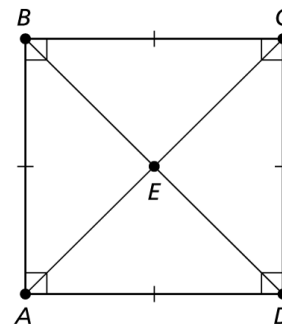
$$\overline{PQ} \cong \overline{TU}$$

**Prove:**  $\overline{QS} \cong \overline{RT}$



11. In the figure, all sides are congruent and all angles are right angles.

- a. Determine whether the quadrilateral is a rectangle. Explain your reasoning.
- b. Determine whether the quadrilateral is a rhombus. Explain your reasoning.
- c. Determine whether the quadrilateral is a square. Explain your reasoning.
- d. Find  $m\angle AEB$ .
- e. Find  $m\angle EAD$ .



# 7.4

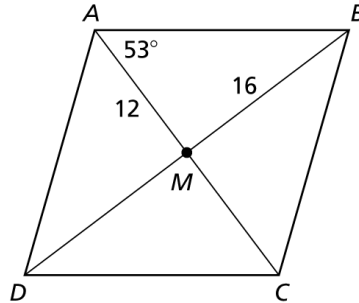
## Practice B

In Exercises 1 and 2, decide whether quadrilateral  $JKLM$  is a rectangle, a rhombus, or a square. Give all names that apply. Explain your reasoning.

1.  $J(3, 5), K(7, 6), L(6, 2), M(2, 1)$
2.  $J(-4, -1), K(-1, 5), L(5, 2), M(2, -4)$

In Exercises 3–7, the diagonals of rhombus  $ABCD$  intersect at  $M$ . Given that  $m\angle MAB = 53^\circ$ ,  $MB = 16$ , and  $AM = 12$ , find the indicated measure.

3.  $m\angle AMD$
4.  $m\angle ADM$
5.  $m\angle ACD$
6.  $DM$
7.  $AC$

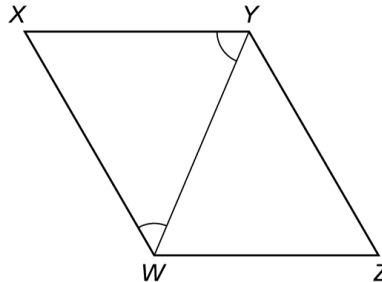


8. Find the point of intersection of the diagonals of the rhombus with vertices  $(-1, 2), (3, 4), (5, 8),$  and  $(1, 6)$ .

9. Use the figure to write a two-column proof.

**Given:**  $WXYZ$  is a parallelogram.  
 $\angle XWY \cong \angle XYW$

**Prove:**  $WXYZ$  is a rhombus.



10. Your friend claims that you can transform every rhombus into a square using a similarity transformation. Is your friend correct? Explain your reasoning.
11. A quadrilateral has four congruent angles. Is the quadrilateral a parallelogram? Explain your reasoning.
12. A quadrilateral has two consecutive right angles. If the quadrilateral is not a rectangle, can it still be a parallelogram? Explain your reasoning.
13. Will a diagonal of a rectangle ever divide the rectangle into two isosceles triangles? Explain your reasoning.