

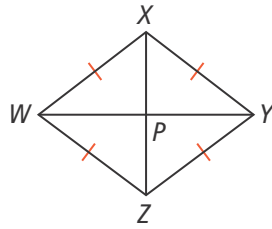


**UNDERSTAND**

13. **Construct Arguments** Write a proof of Theorem 6-16.

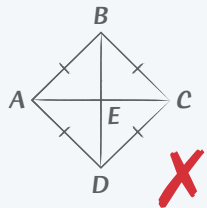
**Given:**  $WXYZ$  is a rhombus.

**Prove:**  $\overline{WY}$  and  $\overline{XZ}$  are perpendicular bisectors of each other.

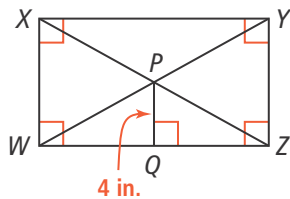


14. **Error Analysis** Figure  $ABCD$  is a rhombus. What is Malcolm's error?

Since  $ABCD$  is a rhombus,  $\overline{AB} \cong \overline{CD}$ . Since the diagonals of a rhombus bisect each other,  $\overline{AE} \cong \overline{BE} \cong \overline{CE} \cong \overline{DE}$ . So, by SSS,  $\triangle ABE \cong \triangle CDE$ .



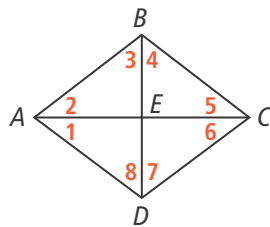
15. **Mathematical Connections** The area of rectangle  $WXYZ$  is  $115.5 \text{ in.}^2$ . What is the perimeter of  $\triangle XYZ$ ? Explain your work.



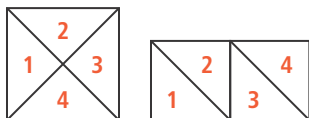
16. **Construct Arguments** Write a proof of Theorem 6-17.

**Given:**  $ABCD$  is a rhombus.

**Prove:**  $\angle 1 \cong \angle 2$ ,  $\angle 3 \cong \angle 4$ ,  $\angle 5 \cong \angle 6$ ,  $\angle 7 \cong \angle 8$



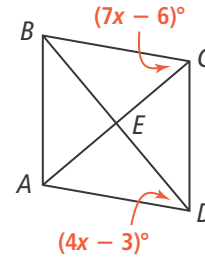
17. **Higher Order Thinking** A square is cut apart and reassembled into a rectangle as shown. Which figure has a greater perimeter? Explain.



**PRACTICE**

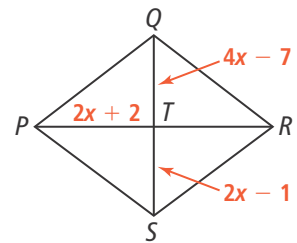
For Exercises 18–20, find each angle measure for rhombus  $ABCD$ . SEE EXAMPLES 1 AND 2

18.  $m\angle ACD$   
19.  $m\angle ABC$   
20.  $m\angle BEA$



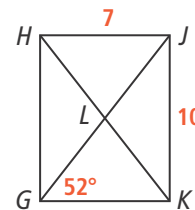
For Exercises 21–23, find each length for rhombus  $PQRS$ . Round to the nearest tenth. SEE EXAMPLES 1 AND 2

21.  $TR$   
22.  $QS$   
23.  $PS$



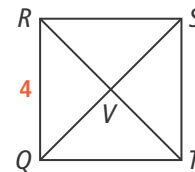
For Exercises 24–27, find each length and angle measure for rectangle  $GHIK$ . Round to the nearest tenth. SEE EXAMPLES 3 AND 4

24.  $m\angle GHK$   
25.  $m\angle HLJ$   
26.  $GJ$   
27.  $HL$

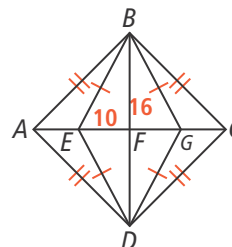


For Exercises 28–30, find each length and value for square  $QRST$ . Round to the nearest tenth. SEE EXAMPLE 5

28.  $SV$   
29.  $RT$   
30. perimeter of  $\triangle RVS$

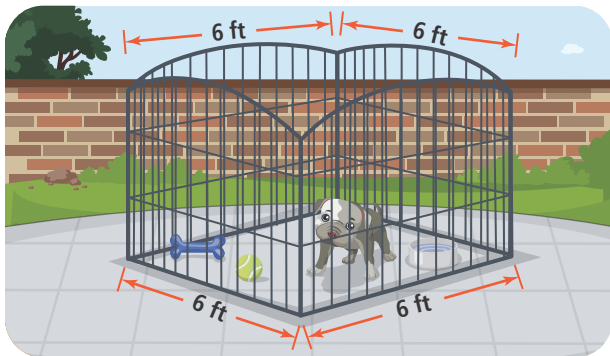


31. If  $ABCD$  is a square, what is  $GC$ ?

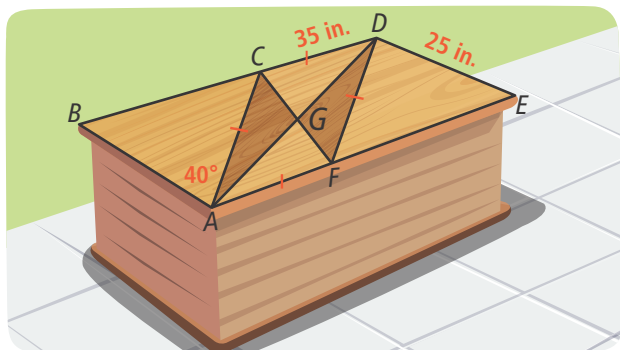


**APPLY**

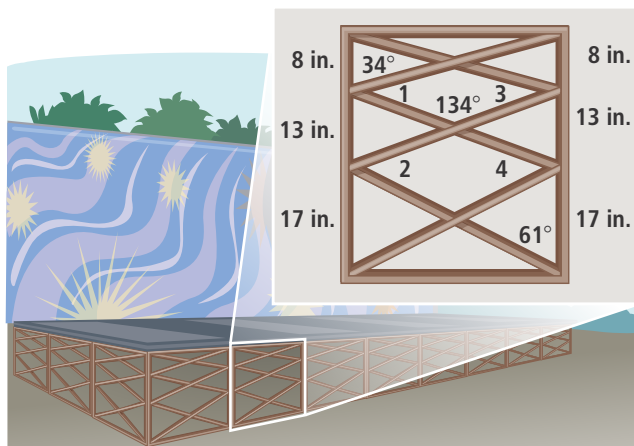
32. **Model With Mathematics** Jordan wants a collapsible puppy pen that gives his puppy at least 35 square feet of area and at least 10 feet of diagonal length. Should Jordan buy the pen shown? Explain.



33. **Make Sense and Persevere** Luis is using different types of wood to make a rectangular inlay top for a chest with the pattern shown.

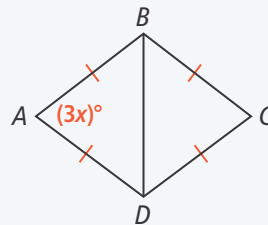


- What angle should he cut for  $\angle CDG$ ? Explain.
  - If he makes the table top correctly, what will the length of the completed top be?
34. **Look for Relationships** A carpenter is building a support for a stage. What should be the measures of  $\angle 1$ ,  $\angle 2$ ,  $\angle 3$ , and  $\angle 4$ ? Explain your answers.

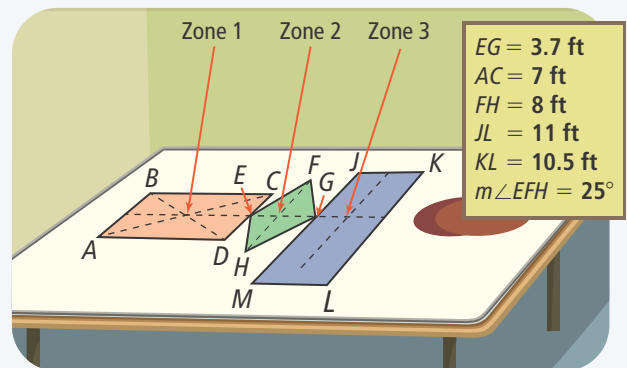


**ASSESSMENT PRACTICE**

35. Which statements are true about all rectangles? Select all that apply.
- (A) Diagonals bisect each other.
  - (B) Adjacent sides are perpendicular.
  - (C) Diagonals are perpendicular.
  - (D) Consecutive angles are supplementary.
36. **SAT/ACT** Which expression gives  $m\angle DBC$ ?



- (A)  $(180 - \frac{3x}{2})^\circ$
  - (B)  $(180 - 3x)^\circ$
  - (C)  $(\frac{180 - 3x}{2})^\circ$
  - (D)  $(\frac{3x}{2} - 180)^\circ$
37. **Performance Task** At a carnival, the goal is to toss a disc into one of three zones to win a prize. Zone 1 is a square, zone 2 is a rhombus, and zone 3 is a rectangle. Some measurements have been provided.



- Part A** What are the lengths of the sides of each zone?
- Part B** What are the angle measures of each zone?
- Part C** What is the area of each zone?