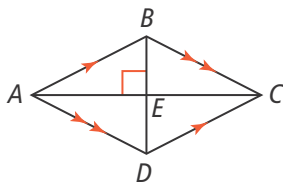


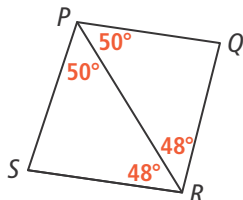


UNDERSTAND

11. **Construct Arguments** Write a proof for Theorem 6-19 using the following diagram.



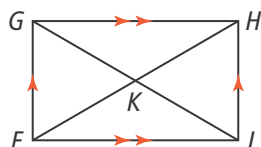
12. **Error Analysis** Becky is asked to classify PQRS. What is her error?



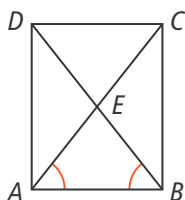
$\overline{PR}$ bisects opposite angles $\angle SPQ$ and $\angle QRS$, so PQRS must be a rhombus.



13. **Construct Arguments** Write a proof for Theorem 6-21 using the following diagram.



14. **Construct Arguments** Write a proof to show that if ABCD is a parallelogram and $\angle ABE \cong \angle BAE$, then ABCD is a rectangle.



15. **Mathematical Connections** If WXYZ is a rhombus with $W(-1, 3)$ and $Y(9, 11)$, what must be an equation of $\overleftrightarrow{XZ}$ in order for WXYZ to be a rhombus? Explain how you found your answer.

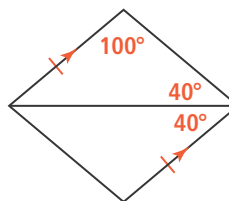
16. **Higher Order Thinking** The longer diagonal of a rhombus is three times the length of the shorter diagonal. If the shorter diagonal is x , what expression gives the perimeter of the rhombus?

PRACTICE

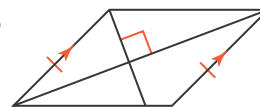
For Exercises 17 and 18, determine whether each figure is a rhombus. Explain your answer.

SEE EXAMPLES 1 AND 2

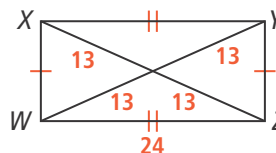
17.



18.

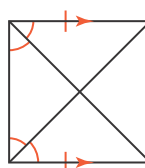


19. What is the perimeter of parallelogram WXYZ? SEE EXAMPLE 3

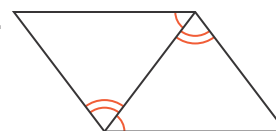


For Exercises 20 and 21, determine the name that best describes each figure: parallelogram, rectangle, square, or rhombus. SEE EXAMPLE 4

20.



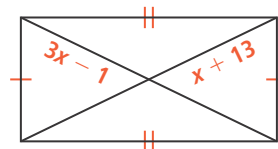
21.



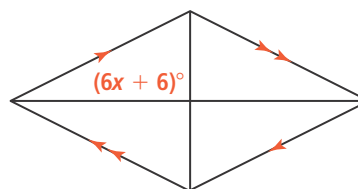
For Exercises 22–24, give the condition required for each figure to be the specified shape.

SEE EXAMPLES 5 AND 6

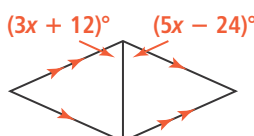
22. rectangle



23. rhombus

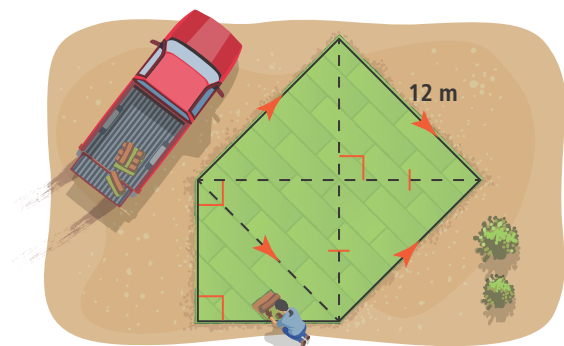


24. rhombus

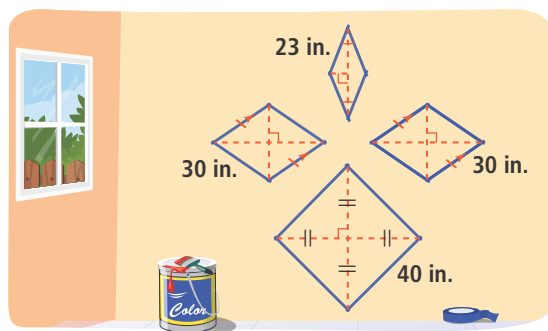


APPLY

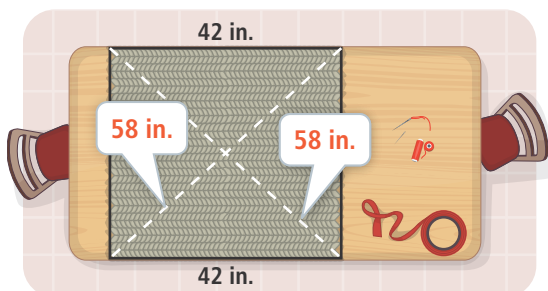
25. **Look for Relationships** Melissa charges \$1.50 per square meter for laying sod. She says she can compute the amount to charge for the pentagonal lawn by evaluating $1.50(12^2 + 0.25(12^2))$. Do you agree? Explain.



26. **Make Sense and Persevere** Jeffery is making a wall design with tape. How much tape does he need to put the design shown on his wall? Explain how you used the information in the diagram to find your answer.

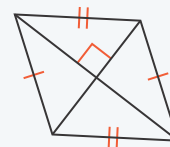


27. **Use Structure** After knitting a blanket, Monisha washes and stretches it out to the correct size and shape. Opposite sides line up with the edges of a rectangular table. She plans to sew a ribbon around the edge of the blanket. How much ribbon will she need?



ASSESSMENT PRACTICE

28. Are the terms below valid classifications for the figure? Select Yes or No.



	Yes	No
Square	☐	☐
Rhombus	☐	☐
Parallelogram	☐	☐
Rectangle	☐	☐
Trapezoid	☐	☐

29. **SAT/ACT** Parallelogram $ABCD$ has diagonals with lengths $AC = 7x + 6$ and $BD = 9x - 2$. For which value of x is $ABCD$ a rectangle?
 (A) 2 (B) 4 (C) 7 (D) 9 (E) 34
30. **Performance Task** Zachary is using the two segments shown as diagonals of quadrilaterals he is making for a decal design for the cover of his smart phone.



Part A Make a table showing at least four types of different quadrilaterals that Zachary can make using the segments as diagonals. For each type of quadrilateral, draw a diagram showing an example. Label angle measures where the diagonals intersect, and label segment lengths of the diagonals.

Part B Are some types of quadrilaterals not possible using these diagonals? Explain.

Part C Which has the greater area, a square or a rectangle? Explain.