

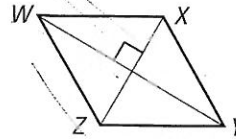
8.4 EXERCISES

HOMWORK KEY

- = WORKED-OUT SOLUTIONS on p. WS10 for Exs. 7, 15, and 55
- ★ = STANDARDIZED TEST PRACTICE Exs. 2, 30, 31, and 62

SKILL PRACTICE

- VOCABULARY** What is another name for an equilateral rectangle?
- ★ **WRITING** Do you have enough information to identify the figure at the right as a rhombus? *Explain.*



RHOMBUSES For any rhombus $JKLM$, decide whether the statement is *always* or *sometimes* true. Draw a diagram and *explain* your reasoning.

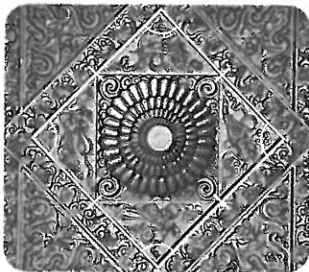
- $\angle L \cong \angle M$
- $\overline{JM} \cong \overline{KL}$
- $\angle K \cong \angle M$
- $\overline{JL} \cong \overline{KM}$
- $\overline{JK} \cong \overline{KL}$
- $\angle JKM \cong \angle LKM$

RECTANGLES For any rectangle $WXYZ$, decide whether the statement is *always* or *sometimes* true. Draw a diagram and *explain* your reasoning.

- $\angle W \cong \angle X$
- $\overline{WY} \cong \overline{XZ}$
- $\overline{WX} \cong \overline{YZ}$
- $\overline{WY} \perp \overline{XZ}$
- $\overline{WX} \cong \overline{XY}$
- $\angle WXZ \cong \angle YXZ$

CLASSIFYING Classify the quadrilateral. *Explain* your reasoning.

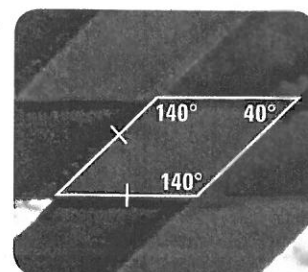
15.



16.



17.

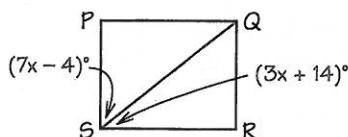


- USING PROPERTIES** Sketch rhombus $STUV$. *Describe* everything you know about the rhombus.

USING PROPERTIES Name each quadrilateral—*parallelogram*, *rectangle*, *rhombus*, and *square*—for which the statement is true.

- It is equiangular.
- Its diagonals are perpendicular.
- The diagonals bisect each other.
- It is equiangular and equilateral.
- Opposite sides are congruent.
- The diagonals bisect opposite angles.

- ERROR ANALYSIS** Quadrilateral $PQRS$ is a rectangle. *Describe* and correct the error made in finding the value of x .



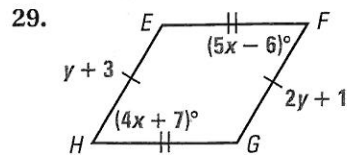
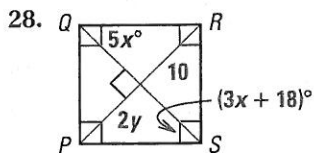
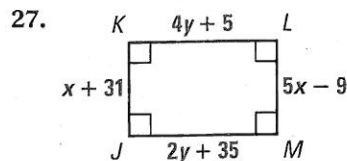
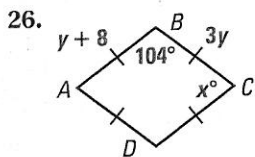
$$7x - 4 = 3x + 14$$

$$4x = 18$$

$$x = 4.5$$



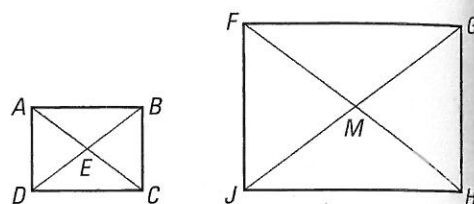
xv **ALGEBRA** Classify the special quadrilateral. *Explain* your reasoning. Then find the values of x and y .



30. **★ SHORT RESPONSE** The diagonals of a rhombus are 6 inches and 8 inches. What is the perimeter of the rhombus? *Explain*.

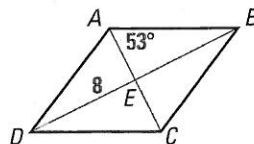
31. **★ MULTIPLE CHOICE** Rectangle $ABCD$ is similar to rectangle $FGHJ$. If $AC = 5$, $CD = 4$, and $FM = 5$, what is HJ ?

- (A) 4 (B) 5
(C) 8 (D) 10



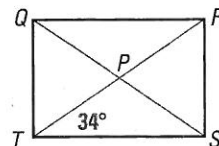
RHOMBUS The diagonals of rhombus $ABCD$ intersect at E . Given that $m\angle BAC = 53^\circ$ and $DE = 8$, find the indicated measure.

32. $m\angle DAC$ 33. $m\angle AED$
34. $m\angle ADC$ 35. DB
36. AE 37. AC



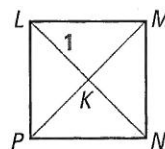
RECTANGLE The diagonals of rectangle $QRST$ intersect at P . Given that $m\angle PTS = 34^\circ$ and $QS = 10$, find the indicated measure.

38. $m\angle SRT$ 39. $m\angle QPR$
40. QP 41. RP
42. QR 43. RS



SQUARE The diagonals of square $LMNP$ intersect at K . Given that $LK = 1$, find the indicated measure.

44. $m\angle MKN$ 45. $m\angle LMK$
46. $m\angle LPK$ 47. KN
48. MP 49. LP



COORDINATE GEOMETRY Use the given vertices to graph $\square JKLM$. Classify $\square JKLM$ and *explain* your reasoning. Then find the perimeter of $\square JKLM$.

50. $J(-4, 2)$, $K(0, 3)$, $L(1, -1)$, $M(-3, -2)$ 51. $J(-2, 7)$, $K(7, 2)$, $L(-2, -3)$, $M(-11, 2)$