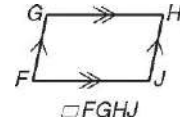Name _____   Date _____   Period_____

Notes 6-2: Properties of Parallelograms

Objectives: 1. Prove and apply properties of parallelograms.
   2. Use properties of parallelograms to solve problems.

A parallelogram is a quadrilateral with _____ pairs of _____ sides.
All parallelograms, such as ▱ FGHJ, have the following properties.

▱FGHJ

Properties of Parallelograms			
	$\overline{FG} \cong \overline{HJ}$ $\overline{GH} \cong \overline{JF}$		$\angle F \cong \angle H$ $\angle G \cong \angle J$
Opposite sides are _____.		Opposite _____ are congruent.	
	m∠F + m∠G = 180º m∠G + m∠H = 180º m∠H + m∠J = 180º m∠J + m∠F = 180º		$\overline{FP} \cong \overline{HP}$ $\overline{GP} \cong \overline{JP}$
Consecutive angles are _____.		The diagonals _____ each other.	

Find each measure.

1. *AB*
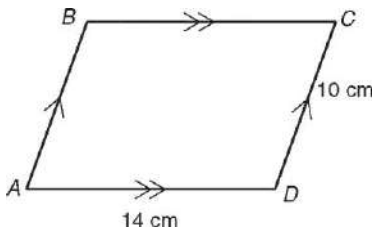
2. m∠*D*

_____   _____
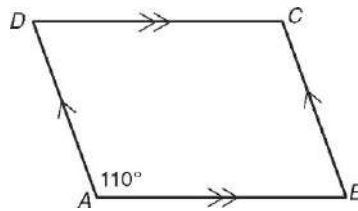
Find each measure in ▱ *LMNP*.

3. *ML*

4. *LP*

_____   _____

5. m∠*LPM*

6. *LN*

_____   _____

7. m∠*MLN*

8. *QN*

_____   _____
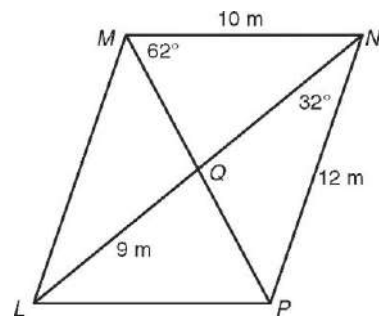
CDEF **is a parallelogram. Find each measure.**

9. *CD*

_____

10. *EF*

_____
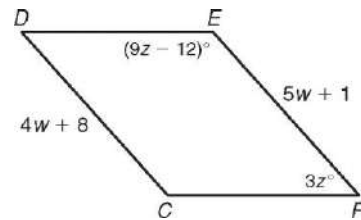
11. m∠*F*

_____

12. m∠*E*

_____

Classify each statement as true or false.

13. Every parallelogram is a quadrilateral.

_____

14 Every quadrilateral is a parallelogram.

_____

15. All angles of a parallelogram are congruent.

_____

16. All sides of a parallelogram are congruent.

_____
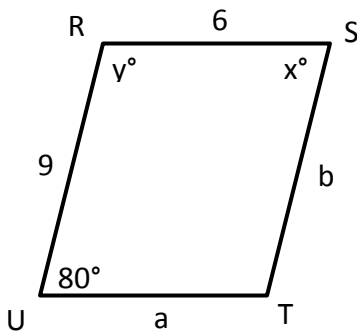
17. In ▱RSTU, $\overline{RS} \parallel \overline{TU}$.

_____

18. In ▱ABCD, if m∠A = 50°, then m∠C = 130°.

_____

19. In ▱XWYZ, $\overline{XY} \cong \overline{WZ}$.

_____

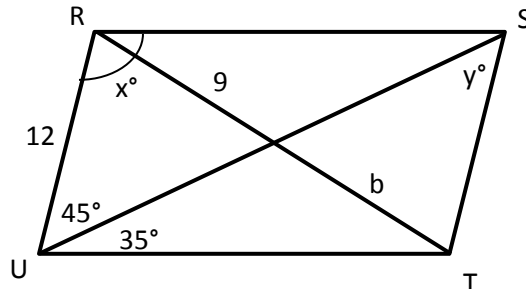20. In ▱ABCD, $\overline{AC}$ and $\overline{BD}$ bisect each other.

_____

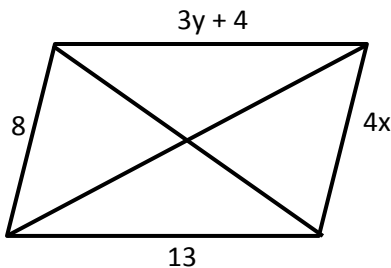In Exercises 21 and 22, quad RSTU is a parallelogram. Find the values of x, y, a, and b.

21.

22.

Each figure in Exs. 23 and 24 is a parallelogram with its diagonals drawn. Find the values of x and y.

23.

24.