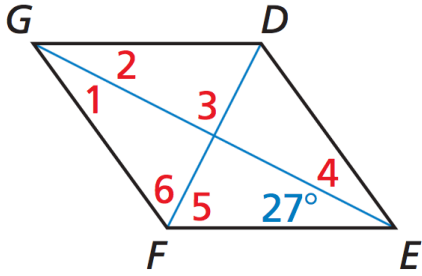# 7.4 Properties of Special Parallelograms

In exercises 1-6, for any rhombus *JKLM, decide whether the statement is always* or *sometimes* true. Draw and diagram and EXPLAIN YOUR REASONING. (See Example 1)
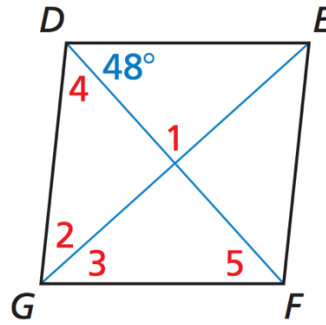
1. ∠L ≅ ∠M	2. ∠K ≅ ∠M
3. $\overline{JM} \cong \overline{KL}$	4. $\overline{JK} \cong \overline{KL}$
5. $\overline{JL} \cong \overline{KM}$	6. ∠JKM ≅ ∠LKM

In Exercises 7–10, find the measures of the numbered angles in rhombus *DEFG*. (See Example 3)
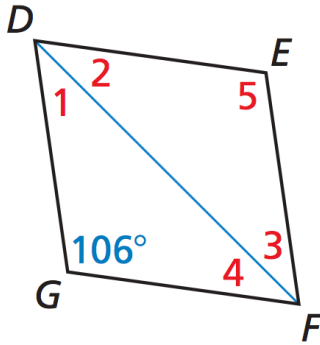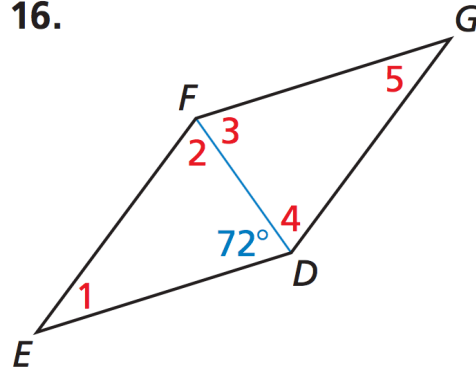
7.

8.

9.

10.

16.

In exercises 11-16, for any rectangle *WXYZ, decide whether the statement is always* or *sometimes* true. Draw and diagram and EXPLAIN YOUR REASONING.

11. $\angle W \cong \angle X$	12. $\overline{WX} \cong \overline{YZ}$
13. $\overline{WX} \cong \overline{XY}$	14. $\overline{WY} \cong \overline{XZ}$
15. $\overline{WY} \perp \overline{XZ}$	16. $\angle WXZ \cong \angle YXZ$

In Exercises 17–20, find the lengths of the diagonals of rectangle *WXYZ*. (See Example 5)

17. $WY = 6x - 7$ $XZ = 3x + 2$	17. $WY = 14x + 10$ $XZ = 11x + 22$
17. $WY = 24x - 8$ $XZ = -18x + 13$	17. $WY = 16x + 2$ $XZ = 36x - 6$

In Exercise 19-23, name each quadrilateral (*parallelogram*, *rectangle*, *rhombus*, or *square*) for which the statement is always true.

18. It is equiangular.

19. It is equiangular and equilateral.
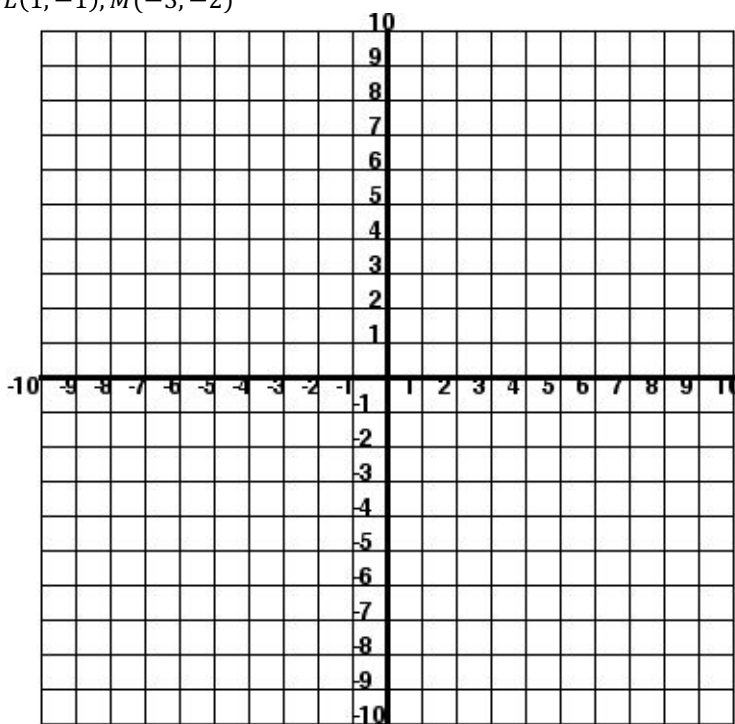
20. The diagonals are perpendicular.

21. Opposite sides are congruent.

22. The diagonals bisect each other.

23. The diagonals bisect opposite angles.

In Exercise 24 & 25, decide whether □$JKLM$ is a rectangle, a rhombus, or a square. Give all names that apply. Explain your reasoning. (See Example 6)

24. $J(-4,2), K(0,3), L(1,-1), M(-3,-2)$

25. $J(3,1), K(3,-3), L(-2,-3), M(-2,1)$