Geometry Name _____ Period _____

Chapter 6 Review

For problems 1-9, state whether each sentence is *true* or *false*.

_____**1.** No angles in an isosceles trapezoid are congruent.

_____**2.** If a parallelogram is a rectangle, then the diagonals are congruent.

_____**3.** The base of a trapezoid is one of the parallel sides.

_____**4.** The diagonals of a rhombus are perpendicular.

_____**5.** In a polygon, a diagonal is a segment that connects consecutive vertices of the polygon.

_____**6.** A rectangle is not always a parallelogram.

_____**7.** A quadrilateral with only one set of parallel sides is a parallelogram.

_____**8.** A rectangle that is also a rhombus is a square.

_____**9.** The leg of a trapezoid is one of the parallel sides.

Find the sum of the measures of the *interior* angles of each regular polygon.

10. decagon

11. 15-gon

Find the measure of one *interior* angle of each regular polygon.

12. rectangle

13. 16-gon

Find the measure of one *exterior* angle of each regular polygon.

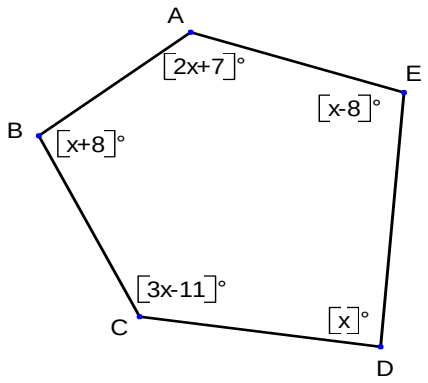
14. hexagon

15. 18-gon

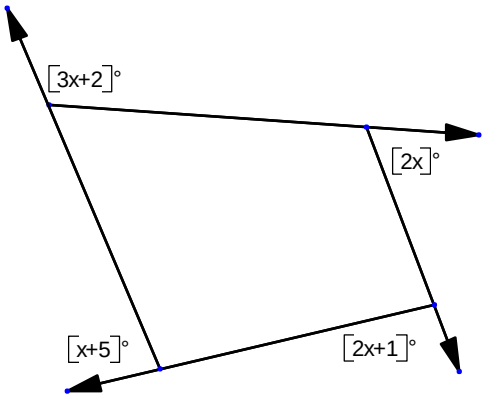
The measure of an interior angle of a regular polygon is given. Find the number of sides in the polygon.

16. 157.5°

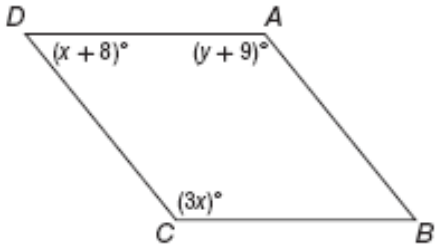
17. Find the value of x.



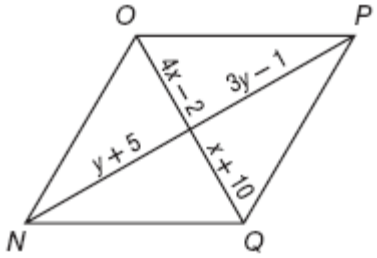
18. Find the value of x.



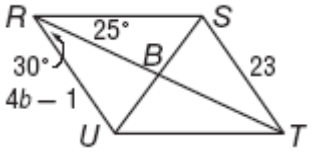
19. Find x and y so that the quadrilateral is a parallelogram.



20. Find x and y so that the quadrilateral is a parallelogram.



Use parallelogram *RSTU* to find each measure.



21. $m\angle RST =$ _____

22. $m\angle STU =$ _____

23. $m\angle TUR =$ _____

24. $b =$ _____

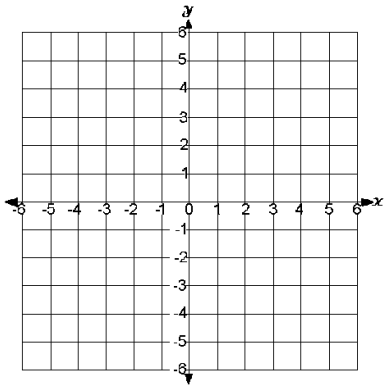
Determine whether each quadrilateral is a parallelogram. Justify your answer.

25.

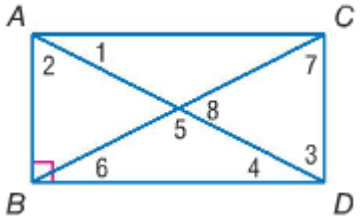
26.

27. Find the coordinate of the intersections of the diagonals of parallelogram *ABCD* with vertices, $A(-2,4), B(-3,-4), C(2,-3), D(3,5)$.

28. Determine if *JKLM* is a parallelogram given the coordinates $J(-4,-4), K(3,-3), L(4,3), M(-3,2)$. Justify your answer with the slope formula and/or distance formula.



Quadrilateral *ABCD* is a rectangle if $m\angle 2 = 68°$.



29. $m\angle 1 =$ _____

30. $m\angle 3 =$ _____

31. $m\angle 4 =$ _____

32. $m\angle 5 =$ _____

33. $m\angle 6 =$ _____

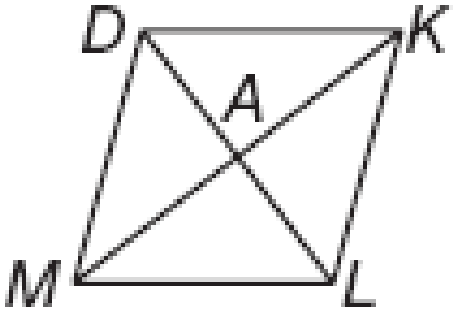
34. $m\angle 7 =$ _____

35. $m\angle 8 =$ _____

Quadrilateral *DKLM* is a rhombus.

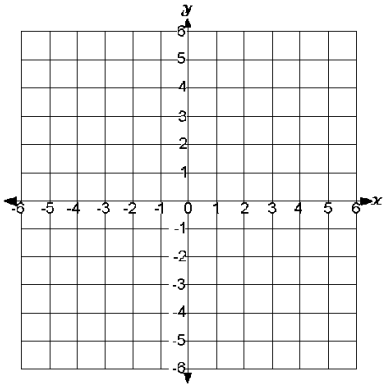
36. If $DM = 5y + 2$ and $DK = 3y + 6$, find KL.

37. If $m\angle KAL = 2x - 8$, find x.

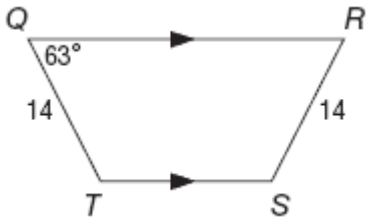


Given each set of vertices, determine whether *QRST* is a rhombus, rectangle, or square. List all that apply. Justify your answer.

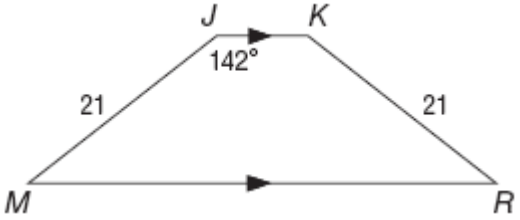
38. $Q(3, 5), R(3, 1), S(-1, 1), T(-1, 5)$



39. Find $m\angle S$



40. Find $m\angle M$



41. Quadrilateral *ABCD* has vertices $A(-4, -1), B(-2, 3), C(3, 3), D(5, -1)$.

a. Verify that *ABCD* is a trapezoid.

b. Determine whether *ABCD* is an isosceles trapezoid. Explain.