Name:_____ Date:_____
Geometry Band:_____

Unit 8: Polygons & Quadrilaterals Study Guide

LT#1: Find the sum of the measures of the interior angles of a polygon.
LT#2: Find the sum of the measures of the exterior angles of a polygon.

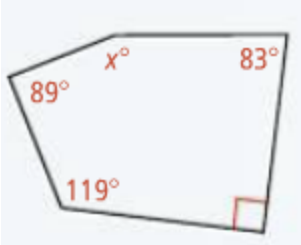
Find the measure of an interior angle and an exterior angle of each regular polygon.

1. hexagon **2.** 16-gon **3.** Pentagon

4. What is the sum of the exterior angles for each polygon in #1-3?

Find the measure of the missing angle.

5.



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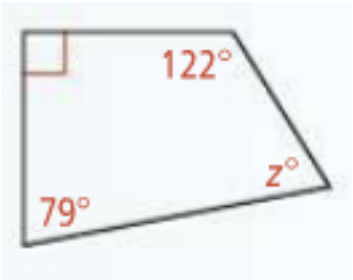

LT#3: Use relationships among sides and angles of parallelograms.
LT#4: Use relationships among diagonals of parallelograms.

Find the measures of the numbered angles for each parallelogram.

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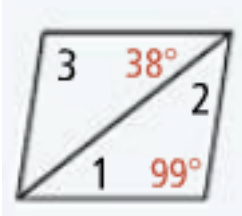

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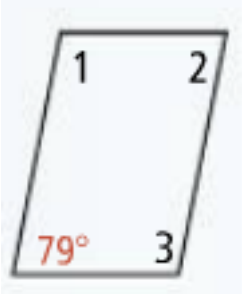

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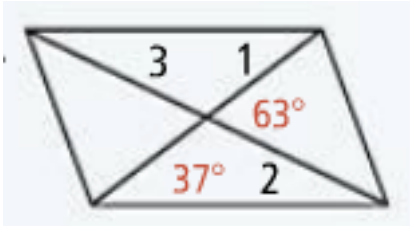


10.

Find the values of x and y in parallelogram $ABCD$.

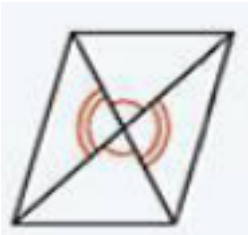
11. $AB = 2y, BC = y + 3, CD = 5x - 1, DA = 2x + 4$

12. $AB = 2y + 1, BC = y + 1, CD = 7x - 3, DA = 3x$

LT#5: Determine whether a quadrilateral is a parallelogram.

Determine whether the quadrilateral must be a parallelogram.

13.



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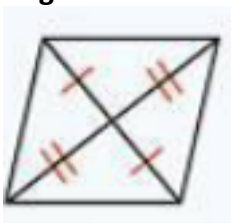

Find the values of the variables for which $ABCD$ must be a parallelogram.

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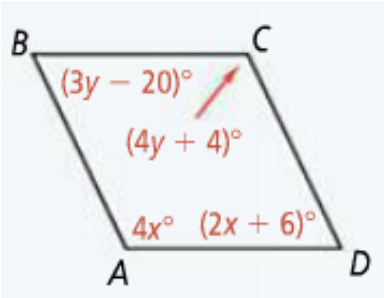

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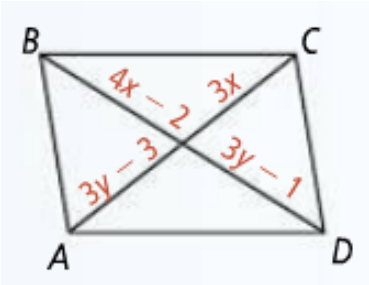


LT#6: Define and classify special types of parallelograms.

Determine whether each statement is *always, sometimes,* or *never* true.

17. A rhombus is a square.

18. A square is a rectangle.

19. A rhombus is a rectangle.

20. The diagonals of a parallelogram are perpendicular.

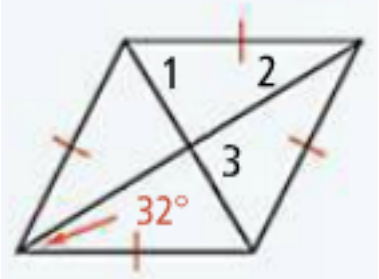
21. The diagonals of a parallelogram are congruent.

22. Opposite angles of a parallelogram are congruent.

LT#7: Use properties of diagonals of rhombuses and rectangles.

Find the measures of the numbered angles in each special parallelogram.

23.



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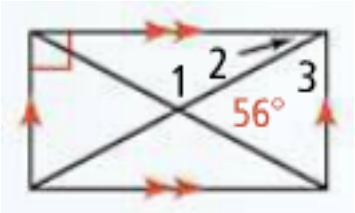
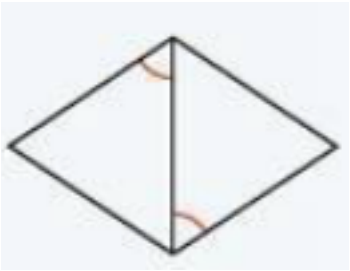


LT#8: Determine whether a parallelogram is a rhombus or rectangle.

Can you conclude that the parallelogram is a rhombus, rectangle, or square? Explain.

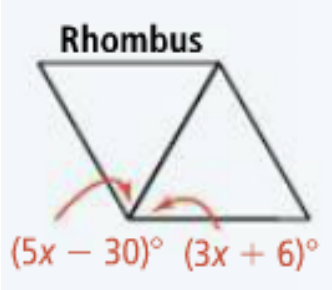
25.



26.

For what value of x is the figure the given parallelogram? Justify your answer.

27.



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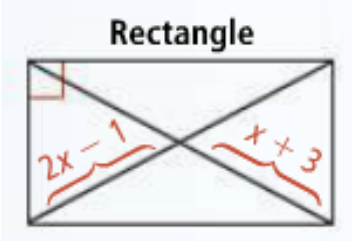
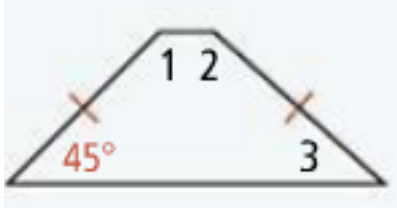


LT#9: Verify and use properties of trapezoids and kites.

Find the measures of the numbered angles in each isosceles trapezoid.

29.



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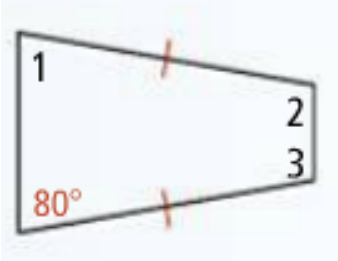
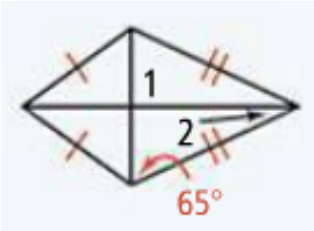


Find the measures of the numbered angles in each kite.

31.



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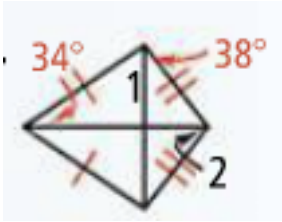
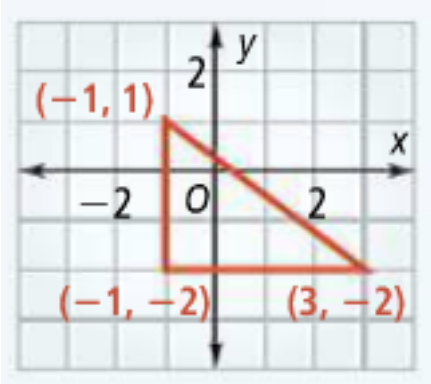


33. A trapezoid has base lengths of $(6x - 1)$ units and 3 units. It midsegment has a length of $(5x - 3)$ units. What is the value of x?

LT#10: Classify polygons in the coordinate plane.

Determine whether ΔABC is *scalene, isosceles,* or *equilateral.*

34.



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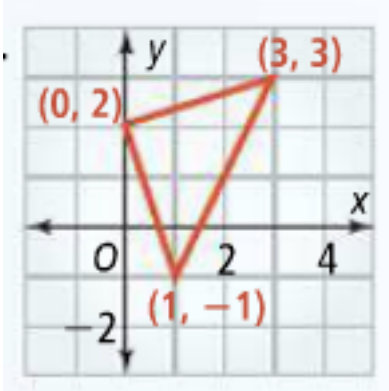
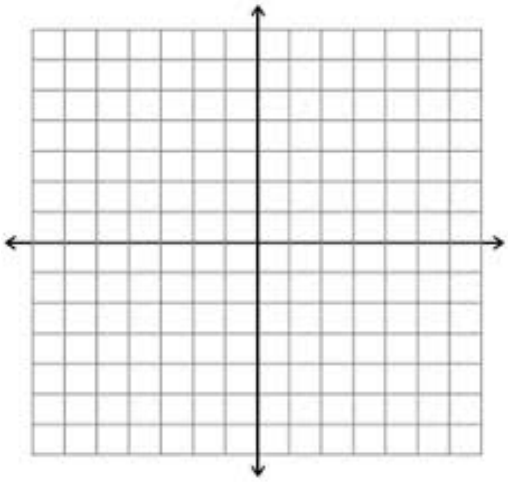
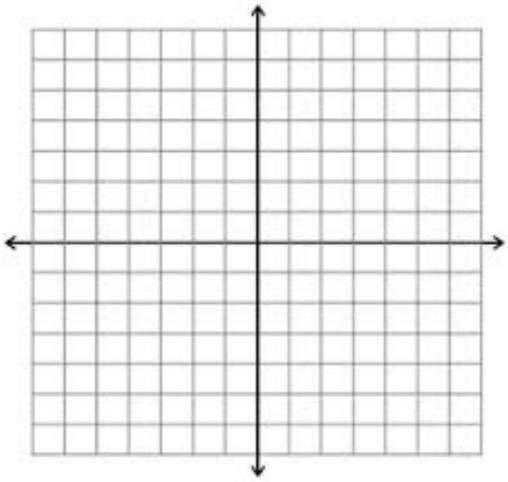


What is the most precise classification of the quadrilateral?

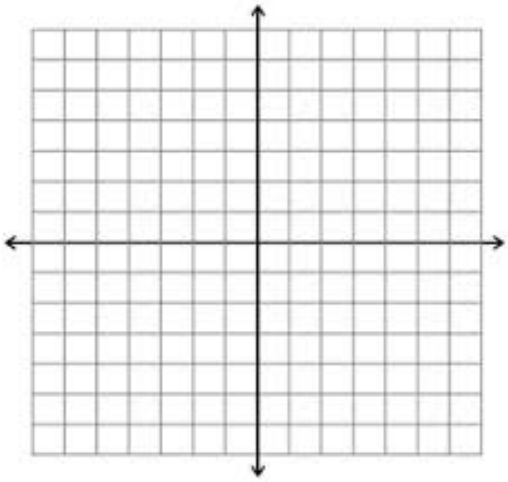
36. $G(2,5), R(5,8), A(-2,12), D(-5,9)$



37. $F(-13,7), I(12,14), A(20,5), D(12,-4)$



38. $Q(4,5), U(12,14), A(20,5), D(12,-4)$



39. $W(-11,4), H(-9,10), A(2,10), T(4,4)$