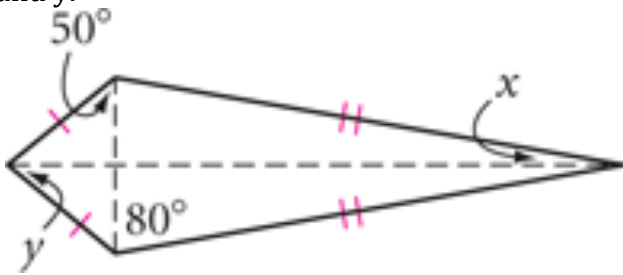**Geometry Unit 3 Review Problems**
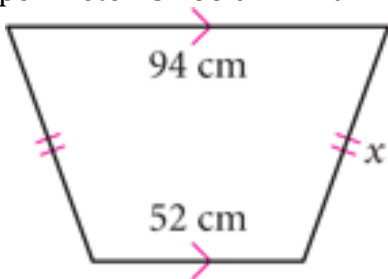**Show all your work**

For numbers 1-4, solve your assigned problem for your group. If you are #2 in your group, solve #2.
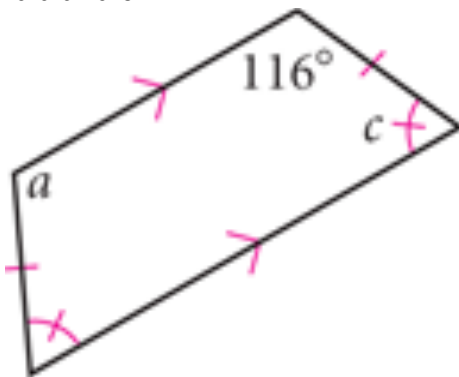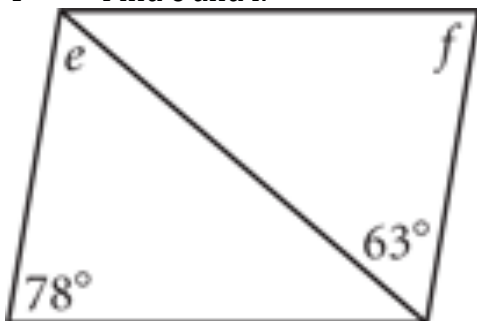
1 Find x and y.

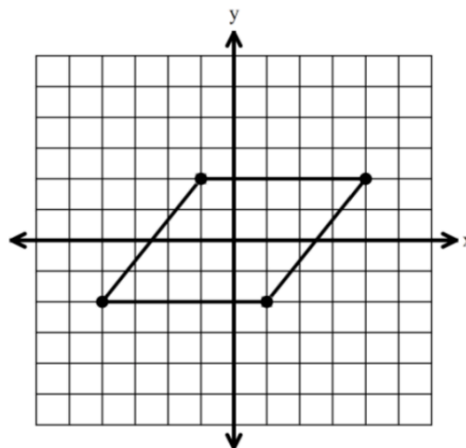**2** The perimeter is 266 cm. Find x.

3 Find a and c.

4 Find e and f.

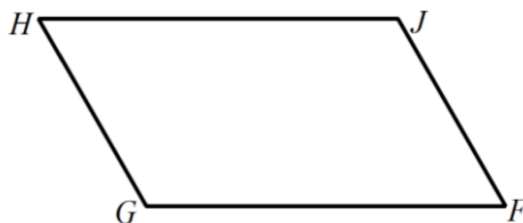38. Reflecting over which line will map the rhombus onto itself?

A. $y = -2x$

B. $y = 0$

C. $y = \frac{1}{4}x$

D. $y = x$

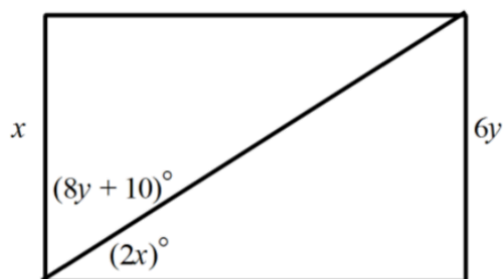39. What is the measure of HJ in Parallelogram $FGHJ$, given the following:

$$FG = x + 7$$
$$GH = 5x + 3$$
$$m\angle F = 46°$$
$$m\angle H = (3x + 10)°$$

A. $HJ = 63$

B. $HJ = 19$

C. $HJ = 12$

D. $HJ = 8$
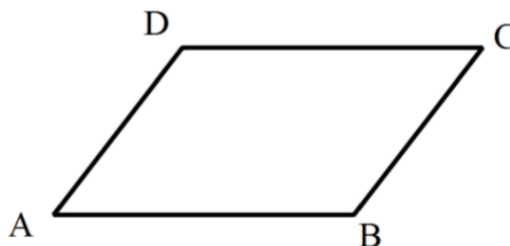
40. What is the value of x in the rectangle?

A. $x = 42$

B. $x = 24$

C. $x = 8$

D. $x = 4$
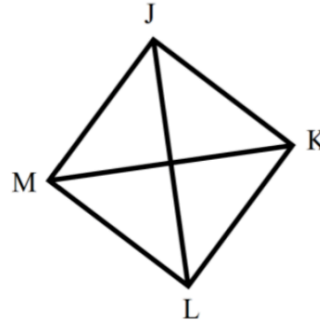
41. Which of the following is NOT always true of Parallelogram $ABCD$?

A. $\overline{AB} \cong \overline{BC}, \overline{DC} \cong \overline{BC}$

B. $\overline{AB} \cong \overline{DC}, \overline{BC} \cong \overline{AD}$
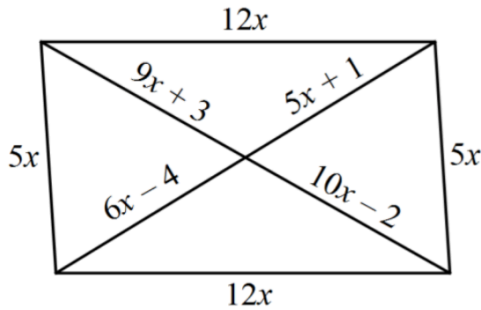
C. $m\angle A + m\angle B = 180°$

D. $AB + BC = AD + DC$

42. *JKLM* is a rhombus. If $m\angle JML = 70°$, what is the value of $m\angle JKM$?

    A. $m\angle JKM = 35°$

    B. $m\angle JKM = 70°$

    C. $m\angle JKM = 55°$

    D. $m\angle JKM = 110°$


43. Based on the figure below, which statements are true?

    I.   The figure is a rectangle

    II.   The figure is a parallelogram

    III. $6x - 4 = 9x + 3$

    IV. $9x + 3 = 10x - 2$

    V. $x = 8$

    VI.   The longest side has a length of 60.

    A. I, III, and V   C. II, IV, and VI

    B. I, IV, and VI   D. II, III, and V

44. A wooden frame has screws at *A, B, C,* and *D* so that the sides of it can be pressed to change the angles occurring at each vertex. $\overline{AB} \cong \overline{CD}$ and $\overline{AB} \parallel \overline{CD}$, even when the angles change. Why is the frame always a parallelogram?
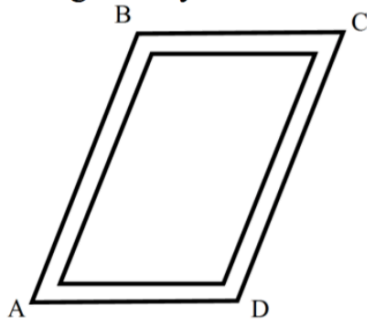

    A. The angles always stay the same, so *ABCD* is a parallelogram.

    B. All sides are congruent, so *ABCD* is a parallelogram.

    C. One pair of opposite sides is congruent and parallel, so *ABCD* is a parallelogram.

    D. One pair of opposite sides is congruent, so *ABCD* is a parallelogram.

45. Which statement is true?

    A. All quadrilaterals are rectangles.

    B. All rectangles are parallelograms.

    C. All parallelograms are rectangles.

    D. All quadrilaterals are squares.

47. Use slope or the distance formula to determine the most precise name for the figure: $A(-1,-4), B(1,-1), C(4,1), D(2,-2)$.

    A. Kite

    B. Rhombus

    C. Trapezoid

    D. Square
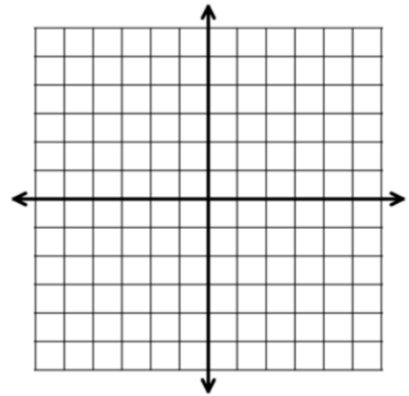
49. Given points $B(-3,3), C(3,4)$, and $D(4,-2)$. Which of the following points must be point A in order for the quadrilateral $ABCD$ to be a parallelogram?

    A. $A(-2,-1)$

    B. $A(-1,-2)$

    C. $A(-2,-3)$

    D. $A(-3,-2)$