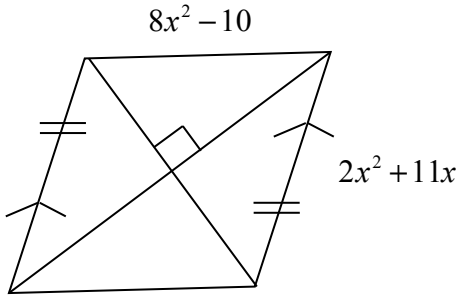
A.M.D.G.

Geometry Accelerated
Chapter 6 Practice Test

Name: _____

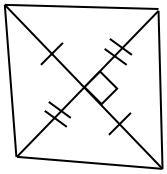
1. Solve for x. Tell the rule(s) used to justify your setup.



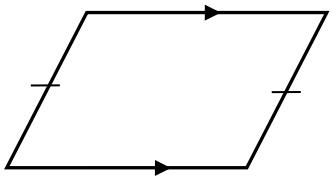
2. Identify the following quadrilaterals as specifically as possible. Give a brief explanation of why you can identify the figure as you did. **(Note: drawings are not to scale!)**

a)

b)

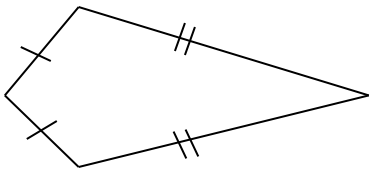


c)

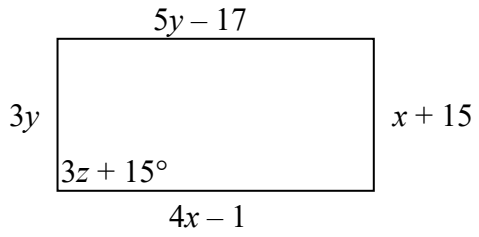


Diagonals are congruent but
<u>do not</u> bisect each other

d)



3. Solve for x, y, and z given the figure below is a rectangle.



4. Find the sum of the interior angles, measure of each interior angle, and measure of each exterior angle for the following ***regular*** polygons.

a) Nonagon

b) 15-gon

c) Decagon

d) 18-gon

e) Octagon

5. Sketch rectangle $ABCD$. If $AC = x^2 + 2x$ and $BD = 35$ cm, find the value(s) of x.

6. Sketch each of the following. Mark all congruent sides and/or angles.

   a) A convex heptagon

   b) A non-convex (concave), equilateral pentagon

   c) An isosceles trapezoid

   d) An equiangular quadrilateral that is **not** equilateral

7. A regular polygon has interior angles of 157.5°. Find the number of sides that the regular polygon must have.

8. Name each of the following as specifically as possible given the listed facts.

   a) An eight-sided polygon that is equilateral and equiangular: _____

   b) The figure illustrated to right: _____

   c) A regular quadrilateral: _____

   d) A quadrilateral with one pair of sides that are congruent and parallel: _____

   e) A three-sided polygon with two sides congruent: _____

9. Determine whether the statements are **TRUE** or **FALSE**. If they are false, ***explain*** why.

   a) All squares are also rectangles.

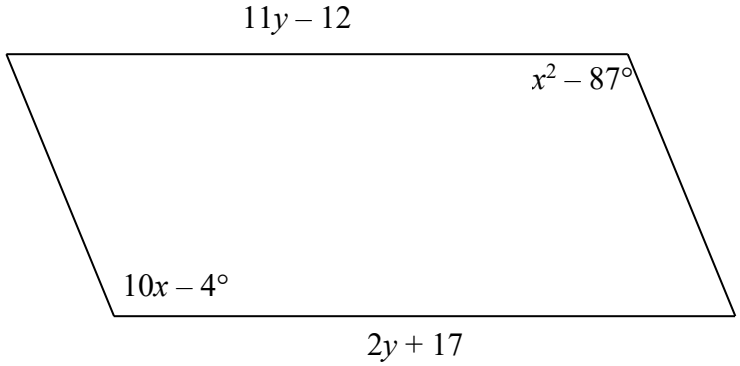
   b) The measure of each interior angle in every pentagon is 108°.

   c) A regular polygon is either equilateral or equiangular.

   d) If a quadrilateral is a rhombus, then it is also a square.

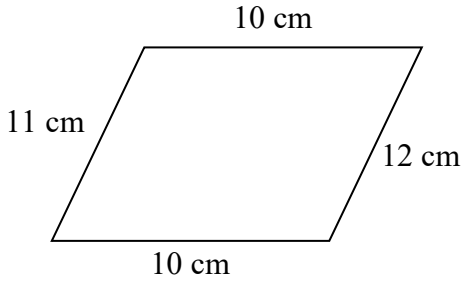
   e) All rectangles are parallelograms

10. Given the parallelogram illustrated below, solve for x and y.

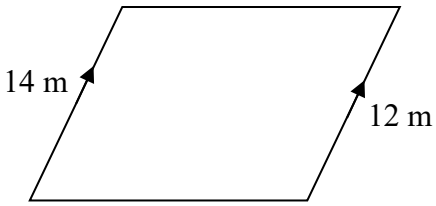


11. Determine if the figures below are parallelograms. If it is a parallelogram, ***explain*** why. If it is not, ***explain*** why not.

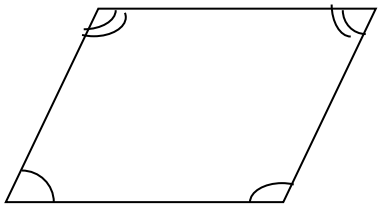
a)



b)

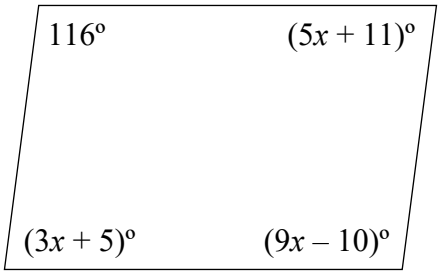


c)

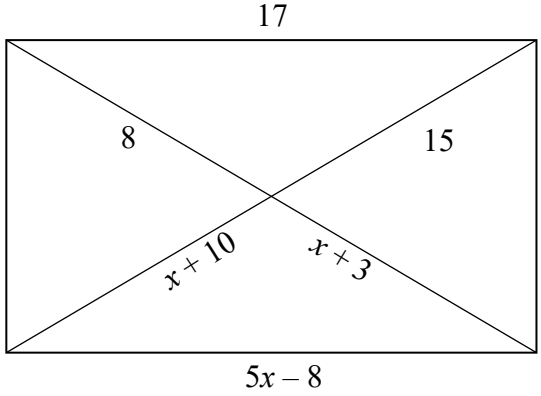


Identify the quadrilateral by solving for the given variable

12)



13)



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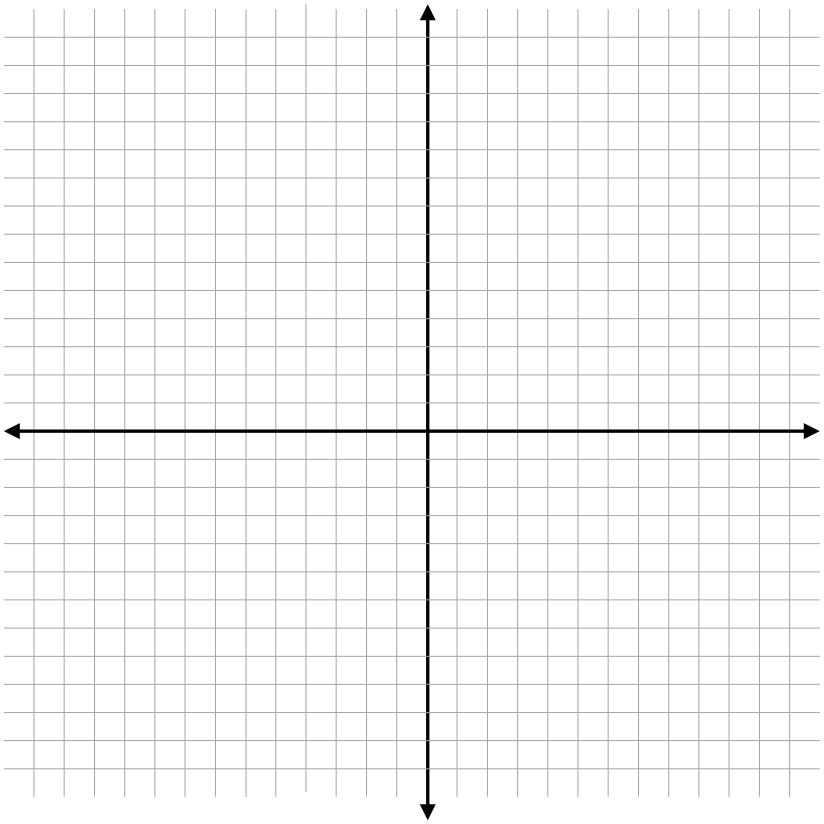
14. Prove that the quadrilateral with vertices $A(-6, 1)$, $B(-4, 4)$, $C(2, 0)$, $D(0, -3)$ is a parallelogram. Then determine whether the parallelogram is a rectangle, rhombus, or square. Use coordinate geometry to justify your reasoning.



15. What type of quadrilateral is formed by the vertices $W(-1, 5)$, $X(-5, 1)$, $Y(-1, -1)$, $Z(3, 1)$? Use coordinate geometry to justify your reasoning.