_**True/False. If the statement is false, rewrite it to make it true.**

1. Every quadrilateral is a parallelogram

2. If quadrilateral ABCD is a parallelogram, then AB = CD.

3. If both pairs of opposite angles in a quadrilateral are congruent, then the quadrilateral is a parallelogram.

4. If MNOP is a rectangle, then it is a parallelogram.

5. You can prove that a quadrilateral is a rectangle by proving that the diagonals are congruent.

6. If a quadrilateral is a rhombus or a square, then the diagonals are perpendicular.

7. A square has all the properties of a parallelogram, a rectangle, a rhombus, and a trapezoid.

8. If a quadrilateral has four right angles, then it must be a rectangle.

9. The bases of an isosceles trapezoid are congruent.

10. The median of a trapezoid is parallel to the bases of the trapezoid and its measure is half the sum of the measures of the bases.

11. A kite has exactly one pair of congruent sides.

12. The diagonals of a trapezoid are congruent.

13. Opposite angles of a rhombus are never supplementary or congruent.

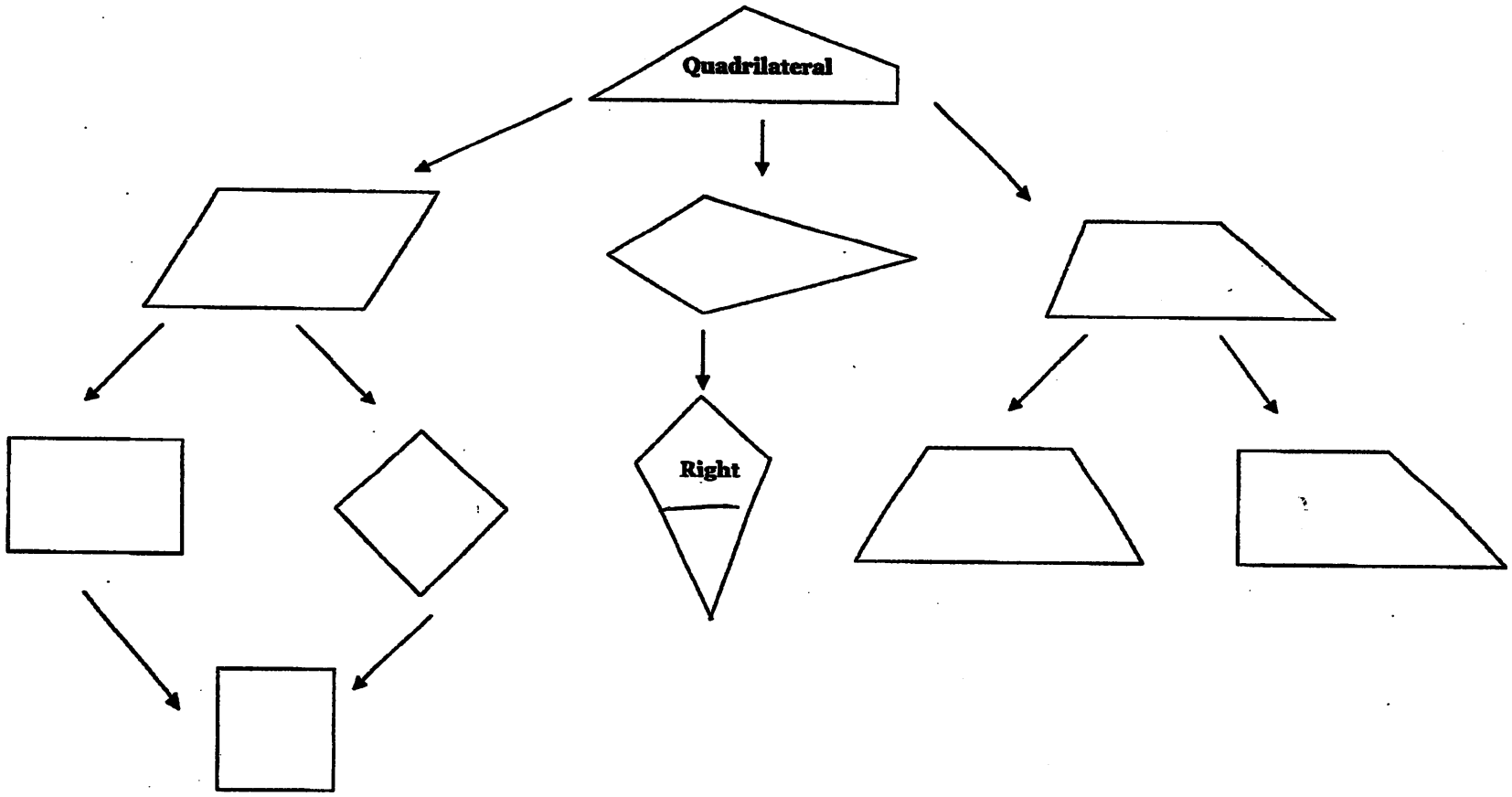
14. In a kite, there is one pair of congruent angles.

15. Consecutive angles are never supplementary in a trapezoid.

Properties of Quadrilaterals

Model Examples

Goal: The goal is to know and apply the properties of quadrilaterals.



Review Topics: Distance, Midpoint, Perimeter and Area, Angles of Polygons

Formulas:	Distance: $d^2 = \Delta x^2 + \Delta y^2$ or $d^2 = (x_2 - x_1)^2 + (y_2 - y_1)^2$	Midpoint: $M\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$
n is the number of sides	Sum of Interior Angles: $180(n-2)$	Interior angle $= \frac{180(n-2)}{n}$
	Sum of Exterior Angle: 360°	Exterior Angle: $\frac{360}{n}$

Find the possible values for **a** given the distance between the 2 points:

1. $d = \sqrt{34}$; (3, 5) and (a, 8)

2. $d = \sqrt{72}$; (-4,a), (2,4)

Find the sum of the measures of the interior angles of each convex polygon.

3. Heptagon

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

4. 150°

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

5. 14-gon

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

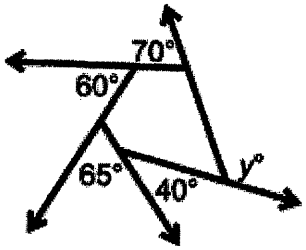
6. 24-gon

Find the midpoint of the line segment with the given endpoints. $M\left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right)$

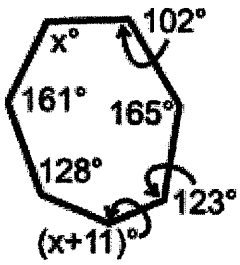
7. (2, -11), (-8, -6)

8. (4, -5), (-9, -37)

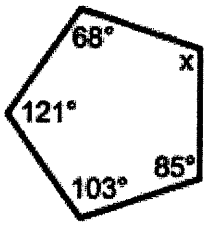
9. Find y:



10. find the measure of the missing variable(s).



11. find the measure of the missing variable(s).



<u>Find the other endpoint of the line segment with the given endpoint and midpoint.</u>

12.Endpoint: (7, -5), midpoint: (-3, 3)

13.Endpoint: (-4, 5), midpoint: (12, 3)

14. Find the Perimeter and Area of the rectangle