Complete with always, sometimes, or never.
1. A square is always a rectangle.
2. The diagonals of a rectangle are always congruent.
3. A rhombus always has consecutive congruent sides.
4. The diagonals of a rhombus always bisect each other.
5. The diagonals of a square are always perpendicular.

Complete each of the following statements.
6. A square is both a rhombus and a rectangle.
7. The diagonals of a rhombus are perpendicular.
8. The median of a trapezoid is parallel to the bases and has a length equal to half the sum of the lengths of the bases.
9. A rhombus is a quadrilateral with four congruent sides.

Study the markings (or Numbers) on each figure and decide whether $ABCD$ must be a parallelogram. Explain your reasoning.

10. No; the pair of opposite sides that are $\not\equiv$ are not the same.
11. Yes; there is one pair of opposite sides that are both $\equiv$ and $\parallel$.
12. Yes; both pairs of opp. angles are $\equiv$.
13. Yes; the diagonals bisect each other.
14. Yes; there is one pair of opposite sides that are both $\equiv$ and $\parallel$.
15. No; we only know that 1 pair of opp. $\angle$s are $\equiv$. 
Write an equation and solve for each value in each of the following parallelograms.

Explain your reasoning.

16. \( (x+5)° \)
   
   \[
   \begin{align*}
   85° &= x + 5 \\
   80° &= x \\
   85° + 40° &= 120° \\
   y + 95° &= 120° \\
   y &= 25°
   \end{align*}
   \]

   \( x = 80° \) because \( \quad \)

   \( y = 45° \) because \( \quad \)

17. \( 3y \)
   
   \[
   \begin{align*}
   2x &= 12 \\
   x &= 6 \\
   3y &= 12 \\
   y &= 4
   \end{align*}
   \]

   \( x = 6 \) because diagonals bisect each other.

   \( y = 4 \) because diagonals bisect each other.

18. \( 3x+4 \)
   
   \[
   \begin{align*}
   3x + 4 &= 25 \\
   3x &= 21 \\
   x &= 7 \\
   2y - 8 &= 28 \\
   2y &= 36 \\
   y &= 18
   \end{align*}
   \]

   \( x = 7 \) because diagonals bisect each other.

19. \( (11x - 24°) \)
   
   \[
   \begin{align*}
   11x - 24° &= 3x + 8° \\
   8x &= 32° \\
   x &= 4° \\
   2x - 6 &= 90° \\
   2y &= 96° \\
   y &= 48°
   \end{align*}
   \]

   \( x = 4° \) because diagonals bisect angles (in a Rhombus).

   \( y = 48° \) because diagonals are perpendicular (in a Rhombus).

20. \( 3x° \)
   
   \[
   \begin{align*}
   2x + 9 &= 90° \\
   3x &= 60° \\
   x &= 20° \\
   2y + 9 &= 141° \\
   2y &= 132° \\
   y &= 66°
   \end{align*}
   \]

   \( x = 20° \) because \( \quad \)

   \( y = 66° \) because \( \quad \)

Write an equation and solve for each value in each of the following trapezoids.

The median is drawn as a dashed line. Explain your reasoning.

20. \( (x+5)° \)
   
   \[
   \begin{align*}
   x + 5 + 85° &= 180° \\
   x + 90° &= 180° \\
   x &= 90° \\
   y &= \frac{1}{2}(5y + 18) \\
   14y &= 5y + 18 \\
   9y &= 18 \\
   y &= 2
   \end{align*}
   \]

   \( x = 90° \) because consecutive angles are supplementary along the legs of a trapezoid.

   \( y = 2 \) because the median length is the average of the bases.

21. \( 2y° \)
   
   \[
   \begin{align*}
   70° + 2y &= 180° \\
   2y &= 110° \\
   y &= 55°
   \end{align*}
   \]

   \( y = 55° \) because consecutive angles are supplementary along the legs of a trapezoid.