Practice with Quadrilaterals

Name: _____   **Date:** _____

1. In which quadrilateral are the diagonals always congruent?

    A. rectangle   B. trapezoid

    C. rhombus   D. parallelogram
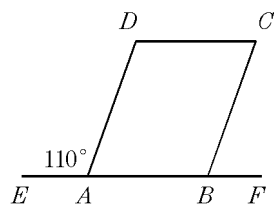
2. If the diagonals of a parallelogram are perpendicular but *not* congruent, then the parallelogram is

    A. a rectangle

    B. a rhombus

    C. a square

    D. an isosceles trapezoid

3. Which quadrilateral must have congruent diagonals?

    A. trapezoid   B. rectangle
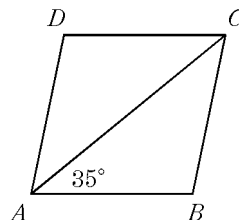
    C. rhombus   D. parallelogram

4. In the accompanying diagram, *ABCD* is a rhombus and $m\angle EAD = 110$. Find $m\angle CBF$.

5. Which type of quadrilateral has diagonals that will always divide it into four congruent triangles?

    A. rhombus   B. rectangle

    C. trapezoid   D. isosceles trapezoid

6. In the accompanying diagram of rhombus *ABCD*, diagonal $\overline{AC}$ is drawn. If $m\angle CAB = 35$ find $m\angle ADC$.
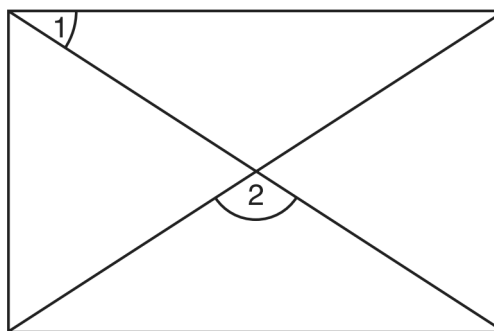

7. In rhombus *ABCD*, the measure of $\angle A$ is 30° more than twice the measure of $\angle B$. Find $m\angle B$.

8. In the accompanying diagram of rhombus *ABCD*, $m\angle CAB = 35$. Find $m\angle CDA$.
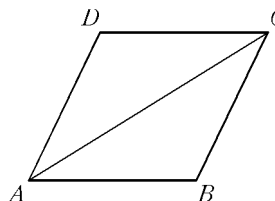
9. As shown in the accompanying diagram, a rectangular gate has two diagonal supports. If $m\angle 1 = 42$, what is $m\angle 2$?
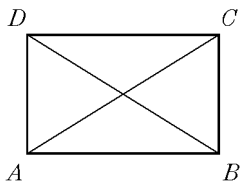

10. A quadrilateral whose diagonals bisect each other and are perpendicular is a

    A. rhombus   B. rectangle

    C. trapezoid   D. parallelogram
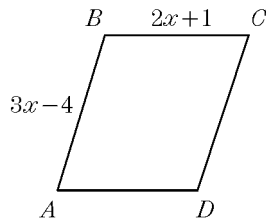
11. If the diagonals of a quadrilateral do *not* bisect each other, then the quadrilateral could be a

   A. rectangle   B. rhombus

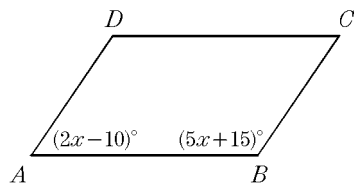   C. square   D. trapezoid

12. In rectangle $ABCD$, diagonal $AC = x + 10$ and diagonal $BD = 2x - 30$. Find the value of x.

13. In the accompanying diagram of rhombus $ABCD$, the lengths of the sides $\overline{AB}$ and $\overline{BC}$ are represented by $3x - 4$ and $2x + 1$, respectively. Find the value of x.

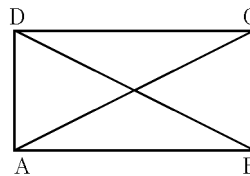14. In the accompanying diagram of parallelogram $ABCD$, $m\angle A = 2x - 10$ and $m\angle B = 5x + 15$. Find x.
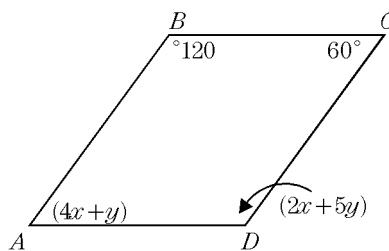

15. In the parallelogram $ABCD$, $m\angle A = 2x + 50$ and $m\angle C = 3x + 40$. The measure of $\angle A$ is

   A. $18°$ B. $20°$ C. $70°$ D. $86°$

16. In the accompanying diagram of rectangle $ABCD$, diagonal $AC = 8x + 4$ and diagonal $BD = 5x + 16$. Find the value of x.

17. In the accompanying diagram, $ABCD$ is a parallelogram with $m\angle B = 120$, $m\angle C = 60$, $m\angle D = 2x + 5y$, and $m\angle A = 4x + y$. Find the values of x and y. Check your solution.

18. A quadrilateral with four congruent sides and an angle measuring $60°$ must be a

   A. rhombus   B. square

   C. rectangle   D. trapezoid

19. If the diagonals of a parallelogram are perpendicular and not congruent, then the parallelogram is

   A. a rectangle

   B. a rhombus

   C. a square

   D. an isosceles trapezoid

20. Which quadrilateral is equiangular but not always equilateral?

   A. rectangle   B. parallelogram

   C. rhombus   D. square