

Assignment

Write

Define each term in your own words.

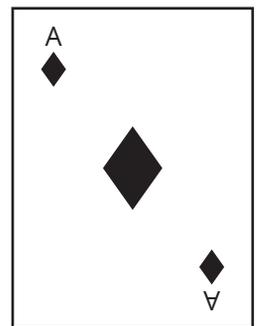
1. Parallelogram/Congruent-Parallel Side Theorem
2. base angles of a trapezoid
3. Trapezoid Midsegment Theorem

Remember

- Properties of a parallelogram: opposite sides are parallel and congruent; opposite angles are congruent; diagonals bisect each other
- Properties of a rhombus: all sides are congruent; diagonals are perpendicular and bisect the vertex angles
- Properties of a rectangle: angles and diagonals are congruent
- Properties of isosceles trapezoids: base angles are congruent; diagonals are congruent
- Properties of a kite: two pairs of adjacent, congruent sides; one pair of opposite angles congruent; one diagonal bisects the other and the vertex angles; diagonals are perpendicular

Practice

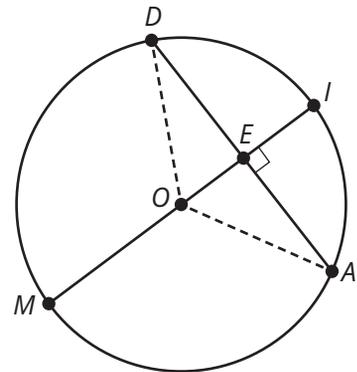
1. The neighbors in a rural community get together for a barn-raising. The first step is to build the rectangular base of the barn. One neighbor explains to everyone how diagonals can be used to verify the base is rectangular. What could the neighbor have said?
2. Jim tells you he is thinking of a quadrilateral that is either a square or a rhombus, but not both. He wants you to guess which quadrilateral he is thinking of and allows you to ask one question about the quadrilateral. Which question should you ask?
3. Consider the Ace of Diamonds playing card shown. The large diamond in the center of the playing card is a quadrilateral. Classify the quadrilateral based only on each piece of given information.
 - a. The diagonals of the quadrilateral bisect each other.
 - b. The four sides of the quadrilateral are congruent.
 - c. The four angles and the four sides of the quadrilateral are congruent.
 - d. The diagonals of the quadrilateral bisect the vertex angles.
 - e. The four angles of the quadrilateral are congruent.
 - f. The opposite sides of the quadrilateral are both congruent and parallel.
 - g. The opposite angles of the quadrilateral are congruent.



Stretch

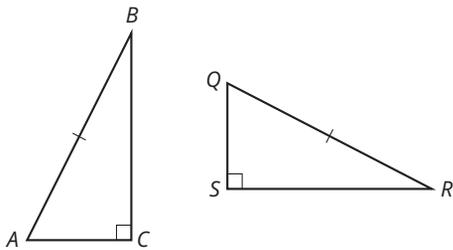
1. Consider the circle shown. Diameter MI is perpendicular to chord DA .

Write a conjecture about the relationship between a diameter and a chord when they are perpendicular. Prove that your conjecture is true in all cases.

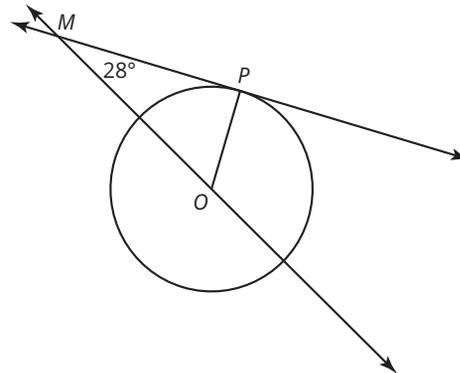


Review

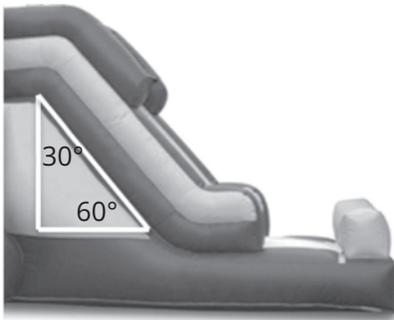
1. Determine the information that is needed to show that $\triangle ABC \cong \triangle QRS$ by the HL Congruence Theorem.



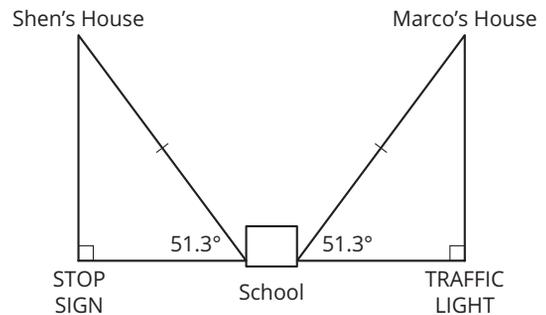
2. If \overline{MP} is a tangent segment and \overline{OP} is a radius, what is the measure of $\angle MOP$? Explain your reasoning.



3. An inflatable slide is modeled from a triangle as shown. The length of the shorter leg of the triangle is 12 feet. Use the 30° - 60° - 90° Triangle Theorem to determine the length of the hypotenuse and the longer leg of the triangle.



4. Shen and Marco both live the same distance from the school. Shen's house is 51.3° northwest of the school, and Marco's house is 51.3° northeast of the school. If the distance from the school to the stop sign is 0.5 mile, how far is it from the school to the traffic light? Explain your reasoning.



5. Determine the measure of the unknown angle in each figure.

