

Geometry 25 Quadrilateral Questions

Name _____

Date _____

Class/Grade _____

1 Which statement is true?

- (A) A square is always a parallelogram.
- (B) A trapezoid never has two congruent sides.
- (C) A parallelogram is never a rhombus.
- (D) A quadrilateral is always a parallelogram.

2 In quadrilateral $ABCD$, $\overline{AB} \cong \overline{CD}$, and $\overline{AB} \parallel \overline{CD}$. Which statement must be true?

- (F) The quadrilateral is a parallelogram.
- (G) The diagonals are perpendicular.
- (H) The diagonals are equal in length.
- (J) The diagonals bisect the angles of the quadrilateral.

3 In parallelogram $QRST$, diagonals \overline{QS} and \overline{RT} intersect at point E . Which statement is always true?

- (A) $\triangle TQE \cong \triangle RQE$
- (B) $\angle RQS \cong \angle SQT$
- (C) $\triangle RES \cong \triangle TEQ$
- (D) $\overline{QS} \perp \overline{RT}$

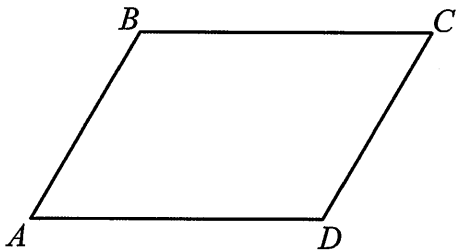
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4 Which statements describe properties of the diagonals of all rectangles?

- I The diagonals are congruent.
- II The diagonals are perpendicular.
- III The diagonals bisect each other.

- (F) II and III, only
- (G) I and II, only
- (H) I, II, and III
- (J) I and III, only

5 In the accompanying figure, $ABCD$ is a parallelogram.



Which statement must be true?

- (A) Angles A and B are congruent.
- (B) The sum of the measures of the four interior angles is 180° .
- (C) Angles A and B are complementary.
- (D) Angles A and B are supplementary.

6 A quadrilateral with four congruent sides and an angle measuring 60° must be a —

- (F) rhombus.
- (G) rectangle.
- (H) square.
- (J) trapezoid.

7 A quadrilateral backyard has four equal sides and one right angle. Which of the following is not true of the shape of the backyard?

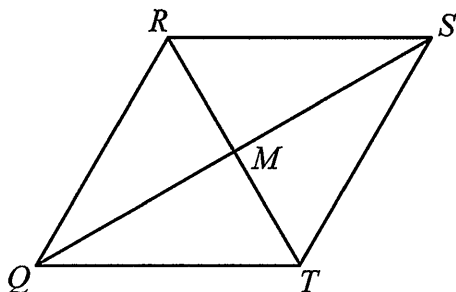
- (A) It must be a rectangle.
- (B) It must be an isosceles trapezoid.
- (C) It must be a square.
- (D) It must be a rhombus.

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- 8** Congruent diagonals are a feature of every —
- (F) rhombus.
 - (G) trapezoid.
 - (H) parallelogram.
 - (J) rectangle.
- 9** Which type of quadrilateral has diagonals that will always divide it into four congruent triangles?
- (A) Isosceles trapezoid
 - (B) Trapezoid
 - (C) Rhombus
 - (D) Rectangle
- 10** In rhombus $PQRS$, diagonals \overline{PR} and \overline{QS} intersect at T . Which statement is always true?
- (F) Triangle RTQ is a right triangle.
 - (G) Triangle PQS is equilateral.
 - (H) Quadrilateral $PQRS$ is a square.
 - (J) Diagonals \overline{PR} and \overline{QS} are congruent.
- 11** Which is an example of a quadrilateral with diagonals that are congruent but do not bisect each other?
- (A) An isosceles trapezoid
 - (B) A rhombus
 - (C) A square
 - (D) A rectangle
- 12** In quadrilateral $ABCD$, if $\overline{AB} \cong \overline{DC}$ and $\overline{AD} \cong \overline{BC}$, then diagonals \overline{AC} and \overline{BD} must —
- (F) be perpendicular.
 - (G) be parallel.
 - (H) be congruent.
 - (J) bisect each other.
- 13** A quadrilateral has diagonals that are congruent but not perpendicular. The quadrilateral contains no right angles. The quadrilateral could be —
- (A) a square.
 - (B) a rectangle.
 - (C) a rhombus.
 - (D) an isosceles trapezoid.

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- 14** In the accompanying diagram of rhombus $QRST$, diagonals \overline{QS} and \overline{RT} intersect at M .



Which statement must be true?

- (F) $\triangle QRM \cong \triangle SRM$
- (G) Triangle QRM is an obtuse triangle.
- (H) Triangle QRM is an isosceles right triangle.
- (J) $\overline{QS} \cong \overline{RT}$
- 15** A parallelogram must be a rhombus if the —
- (A) diagonals are congruent.
- (B) opposite sides are congruent.
- (C) opposite angles are congruent.
- (D) diagonals are perpendicular.

- 16** A four-sided room has two parallel sides and two sets of adjacent angles that are congruent, none of which measure 90° . Which best describes the shape of the room?

- (F) A parallelogram
- (G) A rectangle
- (H) An isosceles trapezoid
- (J) A rhombus

- 17** In which quadrilateral are the diagonals always perpendicular?

- (A) Rectangle
- (B) Square
- (C) Trapezoid
- (D) Parallelogram

- 18** Which statement about figure $ABCD$ is always true?

- (F) If $ABCD$ is a rectangle, then it must be a square.
- (G) If $ABCD$ is a quadrilateral, then it must be a parallelogram.
- (H) If $ABCD$ is a parallelogram, then it must be a trapezoid.
- (J) If $ABCD$ is a parallelogram, then it must be a quadrilateral.

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

- (A) a rectangle.
- (B) a square.
- (C) an isosceles trapezoid.
- (D) a rhombus.

20 If the diagonals of a quadrilateral are perpendicular and not congruent, the quadrilateral may be —

- (F) a rectangle.
- (G) an isosceles trapezoid.
- (H) a square.
- (J) a rhombus.

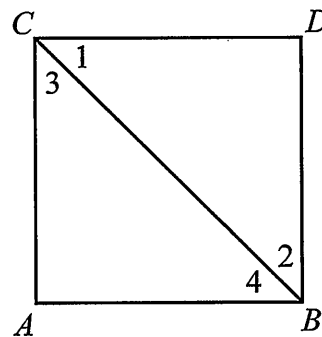
21 A quadrilateral with exactly one pair of parallel sides is a —

- (A) rectangle.
- (B) trapezoid.
- (C) square.
- (D) rhombus.

22 A quadrilateral must be a parallelogram if one pair of opposite sides is —

- (F) parallel, only.
- (G) congruent and parallel.
- (H) parallel, and the other pair of opposite sides is congruent.
- (J) congruent, only.

23 In the accompanying diagram, $ABDC$ is a square with diagonal \overline{BC} .



Which statement is not true?

- (A) $\angle 2 \cong \angle 3$
- (B) $\angle 1 \cong \angle 2$
- (C) $\overline{BC} \cong \overline{AC}$
- (D) $\overline{CD} \cong \overline{AB}$

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- 24** If the midpoints of the sides of a quadrilateral are joined consecutively, the resulting figure will always be a —
- Ⓕ rhombus.
 - Ⓖ square.
 - Ⓗ rectangle.
 - Ⓙ parallelogram.
- 25** Which statement is true?
- Ⓐ All parallelograms are rectangles.
 - Ⓑ All trapezoids are parallelograms.
 - Ⓒ All squares are rhombuses.
 - Ⓓ All rhombuses are rectangles.

