

Name _____
Mr. Schlansky

Date _____
Geometry

Quadrilateral Properties

1. Which of the following is not true of all rectangles?
 - 1) Consecutive sides are perpendicular
 - 2) Opposite sides are parallel
 - 3) Diagonals are perpendicular to each other
 - 4) Diagonals bisect each other

2. Which of the following is true about rhombuses?
 - 1) Consecutive sides are perpendicular
 - 2) Opposite sides are congruent
 - 3) Consecutive angles are congruent
 - 4) Diagonals are congruent

3. Which of the following is false about all parallelograms?
 - 1) Diagonals bisect each other
 - 2) Diagonals are perpendicular to each other
 - 3) Opposite angles are congruent
 - 4) Consecutive angles are supplementary

4. A quadrilateral whose diagonals bisect each other and are perpendicular is a
 - 1) rhombus
 - 2) rectangle
 - 3) trapezoid
 - 4) parallelogram

5. If the diagonals of a quadrilateral do *not* bisect each other, then the quadrilateral could be a
 - 1) rectangle
 - 2) rhombus
 - 3) square
 - 4) trapezoid

6. Which statement is true about every parallelogram?
 - 1) All four sides are congruent.
 - 2) The interior angles are all congruent.
 - 3) Two pairs of opposite sides are congruent.
 - 4) The diagonals are perpendicular to each other.

7. Which quadrilateral has diagonals that always bisect its angles and also bisect each other?

- 1) rhombus
- 2) rectangle
- 3) parallelogram
- 4) isosceles trapezoid

8. The diagonals of a quadrilateral are congruent but do not bisect each other. This quadrilateral is

- 1) an isosceles trapezoid
- 2) a parallelogram
- 3) a rectangle
- 4) a rhombus

9. Given three distinct quadrilaterals, a square, a rectangle, and a rhombus, which quadrilaterals must have perpendicular diagonals?

- 1) the rhombus, only
- 2) the rectangle and the square
- 3) the rhombus and the square
- 4) the rectangle, the rhombus, and the square

10. A parallelogram must be a rhombus when its

- 1) Diagonals are congruent.
- 2) Opposite sides are parallel.
- 3) Diagonals are perpendicular.
- 4) Opposite angles are congruent.

11. A parallelogram must be a rectangle when its

- 1) diagonals are perpendicular
- 2) diagonals are congruent
- 3) opposite sides are parallel
- 4) opposite sides are congruent

12. A rectangle must be a square when its

- 1) consecutive sides are perpendicular
- 2) diagonals are congruent
- 3) diagonals are perpendicular to each other
- 4) opposite sides are parallel

13. A rhombus must be a square when its

- 1) consecutive sides are congruent
- 2) diagonals are congruent
- 3) opposite angles are congruent
- 4) diagonals are perpendicular to each other

14. A parallelogram must be a rectangle when its

- 1) consecutive sides are congruent
- 2) opposite angles are congruent
- 3) consecutive sides are perpendicular
- 4) opposite sides are parallel

15. Which of the following properties does not make a parallelogram a rhombus?

- 1) diagonals bisect the angles
- 2) diagonals are perpendicular to each other
- 3) opposite angles are congruent
- 4) consecutive sides are congruent

16. Which of the following properties does not make a rhombus a square?

- 1) Diagonals are congruent
- 2) Diagonals are perpendicular to each other
- 3) Consecutive sides are perpendicular
- 4) Consecutive angles are congruent

17. Which property is true of all rhombuses but not of all rectangles?

- 1) opposite sides are parallel
- 2) diagonals are perpendicular to each other
- 3) diagonals bisect each other
- 4) opposite angles are congruent

18. Which set of statements would describe a parallelogram that can always be classified as a rhombus?

- I. Diagonals are perpendicular bisectors of each other.
- II. Diagonals bisect the angles from which they are drawn.
- III. Diagonals form four congruent isosceles right triangles.

- 1) I and II
- 2) I and III
- 3) II and III
- 4) I, II, and III

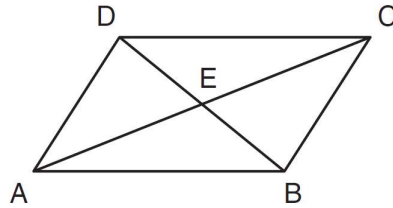
19. If $ABCD$ is a parallelogram, which statement would prove that $ABCD$ is a rhombus?

- 1) $\angle ABC \cong \angle CDA$
- 2) $\overline{AC} \cong \overline{BD}$
- 3) $\overline{AC} \perp \overline{BD}$
- 4) $\overline{AB} \perp \overline{CD}$

20. In parallelogram $ABCD$, diagonals $\overline{AC}$ and $\overline{BD}$ intersect at E . Which statement does *not* prove parallelogram $ABCD$ is a rhombus?

- 1) $\overline{AC} \cong \overline{DB}$
- 2) $\overline{AB} \cong \overline{BC}$
- 3) $\overline{AC} \perp \overline{DB}$
- 4) $\overline{AC}$ bisects $\angle DCB$

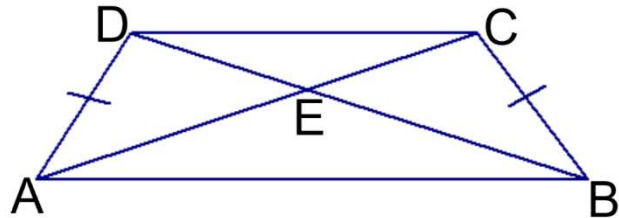
21. In the diagram below, parallelogram $ABCD$ has diagonals $\overline{AC}$ and $\overline{BD}$ that intersect at point E .



Which expression is *not* always true?

- 1) $\angle DAE \cong \angle BCE$
- 2) $\angle DEC \cong \angle BEA$
- 3) $\overline{AC} \cong \overline{DB}$
- 4) $\overline{DE} \cong \overline{EB}$

22. In the diagram below, isosceles trapezoid $ABCD$ has diagonals $\overline{AC}$ and $\overline{BD}$ that intersect at point E .



Which expression is *not* always true?

- 1) $\overline{AC} \cong \overline{DB}$
- 2) $\overline{DC} \parallel \overline{AB}$
- 3) $\overline{DE} \cong \overline{AE}$
- 4) $\overline{AD} \cong \overline{CB}$