

G.CO.C.11: Special Quadrilaterals 2

- 1 Which statement about quadrilaterals is true?
 - 1) All quadrilaterals have four right angles.
 - 2) All quadrilaterals have equal sides.
 - 3) All quadrilaterals have four sides.
 - 4) All quadrilaterals are parallelograms.
- 2 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
- 3 A parallelogram is always a rectangle if
 - 1) the diagonals are congruent
 - 2) the diagonals bisect each other
 - 3) the diagonals intersect at right angles
 - 4) the opposite angles are congruent
- 4 Which reason could be used to prove that a parallelogram is a rhombus?
 - 1) Diagonals are congruent.
 - 2) Opposite sides are parallel.
 - 3) Diagonals are perpendicular.
 - 4) Opposite angles are congruent.
- 5 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 $\angle DCB$
- 6 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) $\overline{AB} \perp \overline{CD}$
- 7 A quadrilateral whose diagonals bisect each other and are perpendicular is a
 - 1) rhombus
 - 2) rectangle
 - 3) trapezoid
 - 4) parallelogram
- 8 Which quadrilateral has diagonals that always bisect its angles and also bisect each other?
 - 1) rhombus
 - 2) rectangle
 - 3) parallelogram
 - 4) isosceles trapezoid
- 9 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
- 10 Which quadrilateral does *not* always have congruent diagonals?
 - 1) isosceles trapezoid
 - 2) rectangle
 - 3) rhombus
 - 4) square
- 11 In quadrilateral $ABCD$, the diagonals bisect its angles. If the diagonals are *not* congruent, quadrilateral $ABCD$ must be a
 - 1) square
 - 2) rectangle
 - 3) rhombus
 - 4) trapezoid

- 12 In quadrilateral $ABCD$, each diagonal bisects opposite angles. If $m\angle DAB = 70$, then $ABCD$ must be a
- 1) rectangle
 - 2) trapezoid
 - 3) rhombus
 - 4) square

- 13 Which quadrilateral has diagonals that are always perpendicular bisectors of each other?
- 1) square
 - 2) rectangle
 - 3) trapezoid
 - 4) parallelogram

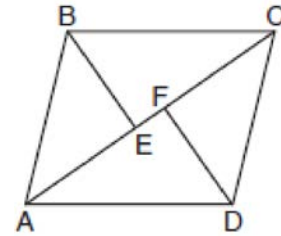
- 14 Which quadrilateral must have diagonals that are congruent and perpendicular?
- 1) rhombus
 - 2) square
 - 3) trapezoid
 - 4) parallelogram

- 15 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

- 16 In a certain quadrilateral, two opposite sides are parallel, and the other two opposite sides are not congruent. This quadrilateral could be a
- 1) rhombus
 - 2) parallelogram
 - 3) square
 - 4) trapezoid

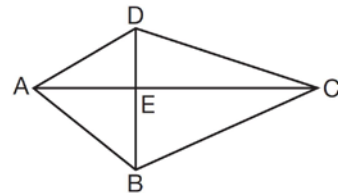
- 17 Which statement is *false*?
- 1) All parallelograms are quadrilaterals.
 - 2) All rectangles are parallelograms.
 - 3) All squares are rhombuses.
 - 4) All rectangles are squares.

- 18 In the diagram below, if $\triangle ABE \cong \triangle CDF$ and \overline{AEFC} is drawn, then it could be proven that quadrilateral $ABCD$ is a



- 1) square
- 2) rhombus
- 3) rectangle
- 4) parallelogram

- 19 In the diagram below of quadrilateral $ABCD$, diagonals \overline{AEC} and \overline{BED} are perpendicular at E .



Which statement is always true based on the given information?

- 1) $\overline{DE} \cong \overline{EB}$
- 2) $\overline{AD} \cong \overline{AB}$
- 3) $\angle DAC \cong \angle BAC$
- 4) $\angle AED \cong \angle CED$

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Answer Section

- 1 ANS: 3 REF: 010404a
 2 ANS: 2 REF: 081501geo
 3 ANS: 1 REF: 011716geo
 4 ANS: 3 REF: 061228ge
 5 ANS: 1
 1) opposite sides; 2) adjacent sides; 3) perpendicular diagonals; 4) diagonal bisects angle

REF: 061609geo

- 6 ANS: 3
 In (1) and (2), $ABCD$ could be a rectangle with non-congruent sides. (4) is not possible

REF: 081714geo

- 7 ANS: 1 REF: 080918ge
 8 ANS: 1 REF: 061125ge
 9 ANS: 1 REF: 081121ge
 10 ANS: 3 REF: 011425ge
 11 ANS: 3 REF: 081419ge
 12 ANS: 3

Diagonals of rectangles and trapezoids do not bisect opposite angles. $m\angle DAB = 90$ if $ABCD$ is a square.

REF: 061511ge

- 13 ANS: 1 REF: 081517ge
 14 ANS: 2 REF: 060526a
 15 ANS: 3 REF: 081128ge
 16 ANS: 4 REF: 080517a
 17 ANS: 4

Not all rectangles are squares.

REF: 010919a

- 18 ANS: 4 REF: 011705geo
 19 ANS: 4 REF: 081417ge