

Deductive Reasoning

Directions: Determine if statement (3) follows from statements (1) and (2) by the Law of Detachment or the Law of Syllogism.

- (1) If a quadrilateral is a rectangle, then its opposite sides are congruent.
(2) $\overline{AB} \cong \overline{CD}$ and $\overline{AD} \cong \overline{BC}$.
(3) $ABCD$ is a rectangle.
- (1) If an angle is obtuse, then it is not acute.
(2) $\sphericalangle 1$ is obtuse.
(3) $\sphericalangle 1$ is not acute.
- (1) Vertical angles are congruent.
(2) If two angles are congruent, then their measures are equal.
(3) If two angles are vertical, then their measures are equal.

Directions: Determine if a valid conclusion can be reached from the two true statements using the Law of Detachment or the Law of Syllogism.

- (1) If two angles are vertical, then they do not form a linear pair.
(2) If two angles are vertical, then they are congruent.
- (1) If two lines intersect to form a right angle, then they are perpendicular.
(2) ℓ and m are perpendicular.
- (1) If an angle is obtuse, then its measure is greater than 90° .
(2) $\sphericalangle 1$ is obtuse.