

SATISH CHANDRA MEMORIAL SCHOOL

CH – 9 CLASS TEST

FM 12

1. Which of the following propositions has a *true* converse? **1**
 - A) If $x = y$, then $x^2 = y^2$.
 - B) If a quadrilateral is a square, then all its angles are equal.
 - C) If $x = y$, then $x^3 = y^3$.
 - D) If a number is divisible by 24, then it is divisible by 4.
 2. Which of the following is a counterexample to the statement (converse): "If two triangles have equal areas, then they are congruent"? **1**
 - A) Two triangles with base 4 cm, height 3 cm and base 6 cm, height 2 cm.
 - B) Two equilateral triangles of side 5 cm.
 - C) Two identical right-angled triangles.
 - D) Two congruent squares.
- FOR (Q3-Q4)**
- A) Both A and R are true and R is the correct explanation of A.
 - B) Both A and R are true but R is not the correct explanation of A.
 - C) A is true but R is false.
 - D) A is false but R is true.
3. **Assertion (A):** The converse of "If a number is a multiple of 5, then it ends in 0 or 5" is true.
Reason (R): Any number that ends in 0 or 5 is a multiple of 5. **1**
 4. **Assertion (A):** If two lines are parallel, then corresponding angles are equal. Its converse is always false.
Reason (R): Equal corresponding angles do not guarantee parallel lines. **1**
 5. A teacher gives a proposition: "If a number is divisible by 12, then it is divisible by 3."
Question: Write the converse and provide a counterexample to test its truth. **2**
 6. Proposition: "If a rectangle has length 5 cm and breadth 3 cm, its area is 15 cm^2 ."
Question: Formulate the converse and determine its truth value. **2**
 7. Rahul is studying parallel lines and transversals from his textbook and exploring how angle relationships dictate line positions.
 - a) Write the converse of the statement: "If two parallel lines are intersected by a transversal, then alternate interior angles are equal." **1**
 - b) Is this converse valid in Euclidean geometry? **1**
 - c) If two lines are cut by a transversal and the alternate interior angles measure 65° each, what can you conclude about the lines? Is it same if the corresponding angles are equal as well? **2**