



## Class 9 Mathematics | Propositions And Their Converses

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

### 1. Which sentence is a proposition?

- A. What is your name? B. Please sit down.  
C. 7 is a prime number. D. Draw a circle.

### 2. The converse of 'If $n$ is divisible by 8, then $n$ is even' is:

- A. If  $n$  is odd, then  $n$  is divisible by 8.  
B. If  $n$  is even, then  $n$  is divisible by 8.  
C. Every odd number is prime.  
D. If  $n$  is divisible by 8, then  $n$  is odd.

### 3. Which number disproves 'Every even positive integer is divisible by 4'?

- A. 12 B. 8 C. 6 D. 16

### 4. If a triangle is equilateral, it is isosceles. The converse is:

- A. always true  
B. not a statement  
C. a definition of a circle  
D. false

### 5. A single counterexample is enough to:

- A. prove every statement  
B. prove an unrelated theorem  
C. disprove a universal statement  
D. prove its converse

### 6. Which implication and its converse are both true for integers?

- A.  $n$  is divisible by 6 if and only if  $n$  is even.  
B.  $n$  is prime if and only if  $n$  is odd.  
C.  $n$  is positive if and only if  $n^2$  is positive.  
D.  $n$  is even if and only if  $n^2$  is even.

### 7. Which disproves 'All prime numbers are odd'?

- A. 2 B. 21 C. 15 D. 9

### 8. The statement 'If a quadrilateral is a square, it is a rectangle' is:

- A. true, but its converse is false  
B. false, but its converse is true  
C. false with a false converse  
D. true with a true converse

### 9. If two sides of a triangle are equal, the opposite angles are:

- A. always  $90^\circ$  B. always  $60^\circ$   
C. equal D. supplementary

### 10. Which pair disproves the converse of "If $x=y$ , then $x^2=y^2$ "?

- A.  $x=1, y=2$  B.  $x=3, y=3$   
C.  $x=0, y=0$  D.  $x=3, y=-3$

### 11. For real $x, y$ , which implication and converse are both true?

- A.  $x=2$  and  $x^2=4$  B.  $x>0$  and  $x^2>0$   
C.  $x=y$  and  $x^2=y^2$  D.  $x=y$  and  $x^3=y^3$

### 12. Which positive integer has an odd number of positive divisors?

- A. 36 B. 24 C. 30 D. 18

### 13. Which is the converse of the isosceles triangle theorem?

- A. Equal angles have equal opposite sides.  
B. Equal sides have equal opposite angles.  
C. Every triangle has two equal sides.  
D. All angles of a triangle are equal.

### 14. If a triangle has sides 6,8,10, the converse of Pythagoras proves it is:

- A. acute-angled B. obtuse-angled  
C. equilateral D. right-angled

### 15. For positive integers, 'divisible by 12' implies 'divisible by 3'. Which disproves the converse?

- A. 36 B. 24 C. 12 D. 9

## ANSWER KEY — check after completing all 15 questions

1.C 2.B 3.C 4.D 5.C 6.D 7.A 8.A 9.C 10.D 11.D 12.A 13.A 14.D 15.D