Inverse Proportion

A. Choose the Correct Answer:

1. Two quantities are said to be in inverse proportion if their product is:
a) Constant
b) Variable
c) Zero
d) Infinite

2. In inverse proportion, if one quantity increases, the other:
a) Increases
b) Remains same
c) Decreases
d) Doubles

3. If 8 workers can complete a work in 15 days, then 12 workers will complete it in:
a) 8 days
b) 10 days
c) 12 days
d) 16 days

4. Which relation shows inverse proportion?
a) Distance and time at constant speed
b) Speed and time for fixed distance
c) Price and quantity
d) Length and breadth of rectangle for fixed area

5. In inverse proportion, x × y is:
a) Increasing
b) Decreasing
c) Constant
d) Variable

B. Write the Missing Terms to Complete the Sentences:

1. In inverse proportion, x × y = _____

2. In inverse proportion, if one quantity increases, the other quantity _____

3. If 4 workers complete a job in 12 days, then 6 workers will complete it in _____ days

4. If x and y are inversely proportional, then x = _____/y

5. Inverse proportion represents a _____ relationship between two quantities

C. Figure out the answers to these questions:

1. If 10 men can paint a wall in 15 days, how many men are required to paint the same wall in 6 days.

2. 20 workers can finish a work in 18 days How many days will 30 workers take to finish the same work.

3. A car takes 5 hours to cover a distance at a speed of 60 km/h How much time will it take to cover the same distance at 100 km/h.

4. If 6 pipes can fill a tank in 8 hours, how many pipes are needed to fill the tank in 4 hours.

5. If 12 men can complete a task in 30 days, how many days will 18 men take.

D. Mark each sentence with a True (✔) or False (✗):

1. In inverse proportion, the product of two quantities is constant. _____

2. If $x \propto \frac{1}{y}$, then x × y = constant. _____

3. In inverse proportion, when one quantity doubles, the other also doubles. _____

4. Inverse proportion means one quantity increases while the other decreases. _____

5. Inverse proportion can be represented by a straight line graph passing through the origin. _____

E. Challenge yourself with these questions:

1. If 5 machines can produce 100 articles in 8 hours, how long will 10 machines take to produce the same number of articles.

2. 15 men can build a wall in 20 days How many men are required to build it in 12 days.

3. If 9 painters can paint a house in 6 days, how long will 18 painters take.

4. A boat takes 4 hours to cover a distance upstream If the speed of the stream increases, will the time taken increase or decrease and why.

5. If 8 taps can fill a tank in 3 hours, how long will 6 taps take to fill the same tank.