



STANDARD 8TH: CHAPTER 7

Variation

Q.1 Choose correct alternative

1. State true or false:
In direct variation, as one variable increases, the other variable decreases.
 - a) True
 - b) False
2. In an inverse variation relationship, if $xy=12$, and $x=4$, what is the value of y ?
 - a) 1.5
 - b) 6
 - c) 3
 - d) 9
3. If y varies inversely with x , and $y=10$ when $x=2$, what is the value of y when $x=5$?
 - a) 4
 - b) 3
 - c) 2
 - d) 1
4. What is true about direct variation?
 - a) The product of the variables remains constant.
 - b) The ratio of the variables remains constant.
 - c) The sum of the variables remains constant.
 - d) The difference between the variables remains constant.
5. State true or false
If y varies inversely with x , doubling the value of x will halve the value of y .
 - a) True
 - b) False
6. The area of an umbrella varies directly as the square of its radius. If the radius of the umbrella is doubled, how much will be the area of the umbrella?
 - a) Twice the original area
 - b) Thrice the original area
 - c) Will be same as original area
 - d) Four times the original area

7. Which is the correct mathematical statement for the following variation.
 "The force of electric attraction 'F' between two statistically charged bodies is directly proportional to the product of the charges on each of the two objects (q_1, q_2) and inversely proportional to the square of the distance 'd' separating these two charged bodies.
- a) $F = \frac{kq_1q_2}{d}$
 b) $F = \frac{q_1q_2}{d^2}$
 c) $F = \frac{kq_1q_2}{d^2}$
 d) $F = \frac{k}{d^2}$
8. If A is jointly proportional with the square of B and the square root of C, find k when A=25, B=5 and C=9.
- a) $\frac{1}{3}$
 b) $\frac{2}{3}$
 c) $\frac{4}{3}$
 d) $\frac{5}{9}$
9. If 5 men take 8 days to type 10 books, apply the principle of variation to find out how many days 8 men will take to type 2 books?
- a) 2 days
 b) 4 days
 c) 2.5 days
 d) 1 day
10. In X is in indirect variation with square of Y and when X is 3, Y is 4. What is the value of X when Y is 4?
- a) 4
 b) 3
 c) 3.5
 d) 6

Q.2 Solve the following questions

- The time it takes for a car to travel a certain distance varies directly as the speed of the car. If it takes 4 hours to travel the distance at 50 km/h, how long will it take to travel the same distance at 80 km/h?
- The force of attraction between two masses is inversely proportional to the square of the distance between them. If the force of attraction is 36 N when the distance between the masses is 2 meters, find the force of attraction when the distance is 4 meters.

3. The illumination from a source of light varies inversely as the square of the distance. A book is at a distance of 9 cm. from a lamp. Find how much further the book is to be removed so that it receives one-third as much light.
4. 6 oxen or 8 cows can graze a field in 28 days. How long would 9 oxen and 2 cows take to graze the same field?
5. If 3 kg of sugar contains 9×10^8 crystals. How many sugar crystals are there in 4 kg of sugar?
6. Find the type and constant of variation

x	3	5	7	9
y	12	20	28	36

7. What is direct variation?
8. Give 5 examples of direct variation.
9. Give 5 examples of Inverse variation
10. Explain: Proportionality constant for Direct and Inverse Variation.