



# **SNS COLLEGE OF TECHNOLOGY**



**An Autonomous Institution**

**Coimbatore-35**

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A++' Grade  
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

**DEPARTMENT OF AIML**

**19GET276 – VQAR II**

II YEAR/ IV SEMESTER

**UNIT 1 – QUANTITATIVE ABILITY III**

**TOPIC – CHAIN RULE**



## CHAIN

## RULE



### 1. Direct Proportion:

Two quantities are said to be directly proportional, if on the increase (or decrease) of the one, the other increases (or decreases) to the same extent.

Eg. Cost is directly proportional to the number of articles.  
(More Articles, More Cost)

### 2. Indirect Proportion:

Two quantities are said to be indirectly proportional, if on the increase of the one, the other decreases to the same extent and vice-versa.

Eg. The time taken by a car is covering a certain distance is inversely proportional to the speed of the car. (More speed, Less is the time taken to cover a distance.)

**Note:** In solving problems by chain rule, we compare every item with the term to be found out.



## CHAIN

## RULE



3 pumps, working 8 hours a day, can empty a tank in 2 days. How many hours a day must 4 pumps work to empty the tank in 1 day?

- A. 9
- B. 10
- C. 11
- D. 12

**Answer:** Option **D**

**Explanation:**

Let the required number of working hours per day be  $x$ .

*More pumps, Less working hours per day (Indirect Proportion)*

*Less days, More working hours per day (Indirect Proportion)*

$$\left. \begin{array}{l} \text{Pumps } 4 : 3 \\ \text{Days } 1 : 2 \end{array} \right\} :: 8 : x$$

$$\therefore 4 \times 1 \times x = 3 \times 2 \times 8$$

$$\Rightarrow x = \frac{(3 \times 2 \times 8)}{(4)}$$

$$\Rightarrow x = 12.$$



## CHAIN

## RULE



If the cost of  $x$  metres of wire is  $d$  rupees, then what is the cost of  $y$  metres of wire at the same rate?

- A. Rs.  $\left(\frac{xy}{d}\right)$
- B. Rs.  $(xd)$
- C. Rs.  $(yd)$
- D. Rs.  $\left(\frac{yd}{x}\right)$

**Answer:** Option **D**

**Explanation:**

Cost of  $x$  metres = Rs.  $d$ .

Cost of 1 metre = Rs.  $\left(\frac{d}{x}\right)$

Cost of  $y$  metres = Rs.  $\left(\frac{d}{x} \cdot y\right) = \text{Rs. } \left(\frac{yd}{x}\right)$ .



## CHAIN

## RULE



Running at the same constant rate, 6 identical machines can produce a total of 270 bottles per minute. At this rate, how many bottles could 10 such machines produce in 4 minutes?

- A. 648
- B. 1800
- C. 2700
- D. 10800

**Answer:** Option **B**

**Explanation:**

Let the required number of bottles be  $x$ .

*More machines, More bottles (Direct Proportion)*

*More minutes, More bottles (Direct Proportion)*

$$\left. \begin{array}{l} \text{Machines} \quad 6 : 10 \\ \text{Time (in minutes)} \quad 1 : 4 \end{array} \right\} :: 270 : x$$

$$\therefore 6 \times 1 \times x = 10 \times 4 \times 270$$

$$\Rightarrow x = \frac{(10 \times 4 \times 270)}{(6)}$$

$$\Rightarrow x = 1800.$$



**CHAIN**

**RULE**





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# RACES





**CHAIN**

**RULE**





THANK YOU