

## Partnership.

Ratio of investment  $\times$  time = Ratio of profit.

$$\frac{(A's \text{ investment} \times A's \text{ time})}{(B's \text{ investment} \times B's \text{ time})} = \frac{A's \text{ profit}}{B's \text{ profit}}$$

- 1) P and Q jointly buy a hotel. P invests 6 times the investment of Q. On receiving profit of Rs. 84000. What will be the P's share

P      Q

P's profit ↑

$$P = 6Q$$

$$\frac{P}{Q} = \frac{6}{1} \quad P : Q = 6 : 1$$

$$P's \text{ share} = \frac{6}{6+1} \times \text{profit}$$

$$= \frac{6}{7} \times 84000$$

$$= 72000 \text{ Rs.}$$

$$Q's \text{ share} = \frac{1}{6+1} \times 84000$$

$$= 12000$$

- 2) Rohit starts a travel agency by investing Rs. 40000. After 4 months Raj joins the agency. Raj invests Rs. 50000. What will be profit share of Raj if they earn total of 187000 as profit in entire year?

Rohit

Raj

$$40000 \times 12$$

$$50000 \times 8$$

$$= 480000 : 400000$$

$$= 48 : 40$$

$$= 6 : 5$$

$$Raj \text{ profit} = \frac{5}{6+5} \times \text{profit}$$

$$= \frac{5}{11} \times 187000$$

$$= 85000$$

$$Rohit = \frac{6}{6+5} \times 187000$$

$$= \frac{6}{11} \times 187000$$

$$= 102000$$



- 3) M invests ₹4000 in coaching classes. After 3 months N comes along with ₹8000. P comes with ₹20000. The classes earn profit of ₹112000 at the end of the year. If profits of M, N and P are in the ratio of 6:9:5 for how many months P was involved?

M	N	P
4000 × 12	8000 × 9	20000 × T

6 : 9 : 5

$$48000 : 72000 : 20000T = 6K : 9K : 5K$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ 6K & 9K & 5K \end{array}$$

$$\frac{48000}{6} = 8000$$

$$20000T = 5(8000)$$

$$20000T = 40000$$

$$T = 2 \text{ months}$$

- 4) Ratio of profit P, Q and R are 5:8:9, what is their investment ratio if their investment time period ratio is 2:5:8?

Investment × time = profit

$$\text{Investment} = \frac{\text{profit}}{\text{time}}$$

	P	Q	R
profit	5	8	9
time	2	5	8

$$\frac{5}{2} : \frac{8}{5} : \frac{9}{8}$$

$$= \frac{40 \times 5}{2} : \frac{40 \times 8}{5} : \frac{40 \times 9}{8}$$

$$= 100 : 64 : 45$$

LCM of 2, 5, 8.

$$\begin{array}{r} 2 \overline{) 2, 5, 8} \\ 4 \overline{) 1, 5, 4} \\ 5 \overline{) 1, 5} \end{array}$$

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5) Ajay and Vijay's investment ratio is 5:2. Ajay gets Rs. 3420 as profit after donating 10% of total profit. What is Vijay's share?

$$A:V.$$

$$5:2$$

$$A's \text{ profit} = \frac{5}{5+2} \times \text{Total profit}.$$

$$684 = \frac{3420 \times \frac{5}{7}}{7} \times T.P.$$

$$T.P. = 684 \times 7.$$

$$\text{Vijay share} = \frac{2}{5+2} \times 684 \times 7$$

$$= 2 \times 684.$$

$$= 1368.$$

6) P, Q and R start a hotel. Q and R invest equally. But P invests  $\frac{1}{5}$  of total investment. Profit = 225,000. How much difference between profit of P and R?

$$P = \frac{1}{5} \times 225000$$

$$P = 45000.$$

$$\text{Total} - P = Q \text{ and } R.$$

$$Q \text{ and } R = 225000 - 45000.$$

$$\frac{Q \text{ and } R}{2} = 180000$$

$$Q = R = \frac{180000}{2} = 90000.$$

$$\text{Difference} = R - P$$

$$= 90000 -$$

$$45000$$

$$= 45000.$$

7) P and Q start a cafe with capital 20k and 40k. After a year, out of the profit of ₹15000 P gets his share profit + some money as his salary. In total if P gets ₹7000, what is the salary?

$$P: Q$$

$$20k: 40k.$$

$$1:2$$

$$P = \frac{1}{1+2} \times 15000.$$

$$= 5000.$$



$$\text{total profit} = P's \text{ profit} + \text{salary}$$

$$7000 = 5000 + S$$

$$S = 2000$$

$$A:V = 2:5$$

$$A's \text{ profit} = \frac{2}{2+5} \times \text{total profit}$$

$$= 2000$$

$$V's \text{ share} = \frac{5}{2+5} \times 7000$$

$$= 5000$$

$$= 5 \times 1000$$

$$= 5000$$

$$= 5000$$

Part B starts a hotel. A and V invest equally. A's share is  $\frac{1}{2}$  of total investment. Profit = 22000. Find the difference between profit of A and V.

$$12000$$

$$B = \frac{1}{2} \times 22000$$

$$= 11000$$

$$A - B = 11000$$