Problems on Partnership

✓Investment,partnership and Shares]

Q1) A began a business with rs 4500 and was joined afterwards by B with rs 5400.if the profits at the end of year was divided in the ratio 2:1 then B joined the business after:

a)5 month b)4months c)6 months d)7 months

$I \propto P$

concept:

$$\left[I_1 \times t_1 : I_2 \times t_2 = P_1 : P_2 \right]$$

$$\sqrt{\left[I_1 \times t_1 : I_2 \times t_2 : I_3 \times t_3 \cdots : I_n \times t_n \right]} = P_1 : P_2 : P_3 : \cdots P_n]$$

$$
\begin{array}{ccc}
I_A \times t_A & I_B \quad t_B & P_A : P_B \\
4500 \times 12 & : 5400 \times x & = 2:1
\end{array}
$$

Investment →

months → A

no. of months B has invest

$$\Rightarrow \frac{4500 \times 12}{5400 \times x} = \frac{x}{1}$$

B invested for $x = 5$ month

B Joined the business after

$(12-5) = 7$ months

Investment,partnership and Shares

Q2.A and B entered into partnership with capitals in the ratio 3:4. At the end of 10months A withdraws, and the profit now are divided in the ratio 5:6.Find how long B remained in the business.

a)9month b)8months c)6months d)7months

$$A : B = 3:4$$

$$
\begin{array}{l}
A = 3x \\
B = 4x
\end{array}
$$

$$\begin{array}{ccc}
I_A \times t_A & I_B \times t_B & P_1 : P_2 \\
\Rightarrow 3x \times 10 \, \text{month} & : 4x \times t & = 5:6
\end{array}$$

$$\Rightarrow \frac{3x \times 10^{2}}{4x \times t} = \frac{5}{6}$$

$$t = 3 \times 3 = 9 \, \text{month}$$

Investment,partnership and Shares

Q3 A and B started a business by investing rs35000 and rs20000 respectively. B left the business after 5months and c joined the business with a sum of 15000. The profit earned at the end of the year is rs 84125. What is B's share of profit.
a)14133 b)15000 c)13460 d)none

B invested only for 5 month
C will invest only for 7 month

$\frac{12}{-5} \quad (7)$

A: 35000
B: 20,000
C: 15000
84125

$I_A \times t_A : I_B \times t_B : I_C \times t_C$

$35000 \times 12 : 20000 \times 5 : 15000 \times 7 = P_A : P_B : P_C$

$84125 \times \frac{20}{(84+20+21)}$

$84 : 20 : 21$
$P_A : P_B : P_C$

$\frac{3365}{16825}$
$84125 \times \frac{20}{125} \cancel{25}$

13460 ✓

Investment,partnership and Shares

Q4 Ninad, Vikas and Manav enter into a partnership. Ninad invests some amount at the beginning. Vikas invests doubles the amount after 6 months and Manav invests thrice the amount invested by Ninad after 8 months. They earn a profit of Rs 45000 at the end of the year. What is Manav's share in the profit?.
a)15000 b)25000 c)12000 d)9000

(12mon) Ninad = x rs
12-6 (6 month) after 6month V = 2x rs
12-8 (4 month) after 8 month = M = 3x rs
Manav = 15000

$I_N \times t_N : I_V \times t_V : I_M \times t_M = P_N : P_V : P_M$

$x \times 12 : 2x \times 6 : 3x \times 4$

$1 : 1 : 1 = P_N : P_V : P_M$
15000,15000,15000

$\frac{45000}{3} = 15000$

Investment,partnership and Shares ✓

Q5 Shakeel started a software business by investing Rs. 20,000. After six months, Neel joined him with a capital of Rs. 30,000. After 3 years, they earned a profit of Rs. 13,950. What was Shakeel's share in the profit?

A. Rs. 6200 B. Rs. 6400 C. Rs. 4200 D. Rs. 7750 E. None of These

S: 20,000   N: 30,000   after 3year/36month
3 year   after 6 month   13,950
            (36-6) = 30 month

$I_S \times t_S : I_N \times t_N : P_S : P_N$

$20000 \times 36 : 30000 \times 30 : P_S : P_N$
$4 \qquad\qquad 5$

$(P_S) P_N = 4:5$

$= 13950 \times \frac{4}{4+5}$

$= \frac{13950 \times 4}{9} = 1550 \times 4$
$= 6200$

13950
6200
7750

Investment, partnership and Shares ✓

Q6. A and B started a business by investing Rs.3,50,000 and 1,40,000 respectively. A gets 20% of the yearly profit for managing the business. Thereafter the profit is divided in the ratio of the capital. If A receives totally Rs.38,000 more than B at the end of the year, then the profit is ?

A. Rs. 28,000   B. Rs. 2,80,000   C. Rs. 1,05,000   D. Rs. 70,000   E. None of These   V.V.I

$A = 3,50,000$

$B = 1,40,000$

Total Profit = x rs

$x \times \dfrac{20}{5100} = \dfrac{x}{5}$ (A)

$x - \dfrac{x}{5} = \dfrac{4x}{5}$ (Remaining)

$3,50,000 \times 12 : 1,40,000 \times 12$

$\dfrac{5 : 2}{} = P_A : P_B$

$P_A = \dfrac{4x}{5} \times \dfrac{5}{7}$

$\dfrac{4x}{5}$, $\dfrac{20x + 7x}{35} \Leftarrow \dfrac{4x}{7} + \dfrac{x}{5}$

$\dfrac{27x}{35} : \dfrac{}{35}$

$P_B = \dfrac{4x}{5} \times \dfrac{2}{7} \quad \dfrac{8x}{35}$

$P_A = P_B + 38000$

→ $P_A - P_B = 38000$

$\dfrac{27x}{35} - \dfrac{8x}{35} = 38000$

$19x = 38000 \times 35$

$x : 70,000$ ✓
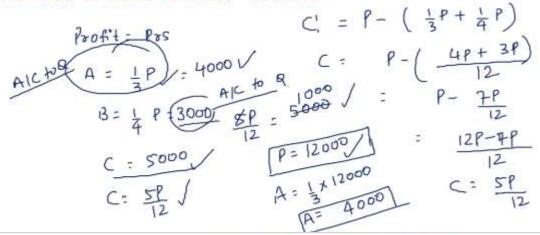
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Investment, partnership and Shares

Q7. A,B and C are partners in a business. During a particular year, A received one-third of the profit, B received one-fourth of the profit and C received the remaining Rs.5000. How much amount of the money did A receive?

a. Rs.1000   b.Rs.3000   c.Rs.4000   d.Rs.5000

Profit = P rs

A/C to Q $A = \dfrac{1}{3}P$ = 4000 ✓

$B = \dfrac{1}{4}P$ = 3000

$C = 5000$ ✓

$C = \dfrac{5P}{12}$ ✓

$C = P - \left(\dfrac{1}{3}P + \dfrac{1}{4}P\right)$

$C = P - \left(\dfrac{4P + 3P}{12}\right)$

$= P - \dfrac{7P}{12}$

$= \dfrac{12P - 7P}{12}$

$C = \dfrac{5P}{12}$

A/C to R

$\dfrac{5P}{12} = 5000$

$P = 12000$ ✓

$A = \dfrac{1}{3} \times 12000$

$A = 4000$

Investment, partnership and Shares

Q8. A and B jointly made a profit of Rs.1650 and they decided to share it such that 1/3 of A's profit is equal to 2/5 of the B's profit. Then profit of B is ?

a. Rs.700   b. Rs.750   c.Rs.850   d.Rs.800

Ratio & proportion

→ $\dfrac{1}{3}A = \dfrac{2}{5}B$

$\dfrac{A}{B} = \dfrac{6}{5}$

$A : B = 6 : 5$ ✓

A & B ⇒ 1650

$1650 \times \dfrac{5}{6+5}$

$1650 \times \dfrac{5}{11}$

$B = 750$ ✓

$\begin{array}{r} 1650 \\ -750 \\ \hline A = 900 \end{array}$ ✓

Q9. A and B invest Rs.3000 and Rs.2400 respectively in business. If after one year there is a loss of Rs.720 how much loss will B bear ?

a. Rs.72   b.Rs.320   c.Rs.400   d.Rs.360

$$\left[\text{Investment} \propto \text{profit/loss} \right]$$

$$I_A \times t_A : I_B \times t_B = L_A : L_B$$

$$3000 \times 12 : 2400 \times 12$$

$$5 : 4 = L_A : L_B$$

720rs = Loss

$$720 \times \frac{4}{8}$$

$$= \boxed{320}$$

Q10. Rohit started a business with Rs.75000 and after some months Simran joined him with Rs.60000. if the profit at the end of the year is divided in the ratio 3:1, then after how many months did Simran join Rohit?

a. 7month   b.6month   c.8month   d.4month

$$R = 75000$$

$$S = 60,000$$

$$(12-5) = 7 \text{ months}$$

$$P_R : P_S = 3:1$$

$$\Rightarrow I_R \times t_R : I_S \times t_S = P_R : P_S$$

$$75000 \times 12 : 60,000 \times x = 3:1$$

$$\frac{75}{x} = \frac{3}{1}$$

$$\boxed{x = 5}$$

Simran invested for 5 months