

CHAPTER

PARTNERSHIP



Q1 A starts a business with 1000. B joins him after 8 months with 4000. C puts a sum of 5000 for 4 m only. At the end of year business gave a profit 2800. How much profit be divided among them?

$$\text{Ans} \quad P(A) : P(B) : P(C)$$

$$1000 \times 12 : 4000 \times 6 : 5000 \times 4 \\ 12000 : 24000 : 20000.$$

$$A : B : C = 12000 : 24000 : 20000$$

$$= 6 : 12 : 10$$

$$= 3 : 6 : 5 \Rightarrow 3+1+5 = 14$$

$$\therefore \text{Total profit} = 2800.$$

$$\text{A's profit or share} = \frac{3}{14} \times 2800 = 600$$

$$\text{B's share} = \frac{6}{14} \times 2800 = 1200$$

$$\text{C's share} = \frac{5}{14} \times 2800 = 1000$$

∴ 600, 1200, 1000. ans

Q2 A & B enter into a partnership for year. A contributes 3000 & B 4000. After 4 months they admit C who contrib. 4500. If B withdraw his contribution after 6 months, how would they share profit after 6 months, none would they share profit of 1000.?

$$\text{Ans} \quad A : B : C$$

$$3000 \times 12 : 4000 \times 6 : 4500 \times 4$$

$$6 \times 3 : 2 \times 6 : 9 \times 2$$

$$18 : 12 : 18$$

$$3 : 2 : 3 = \text{total } 8$$

Then,

$$\text{PROFIT OF A} = \frac{3}{8} \times 1000$$

$$= \frac{3000}{8} = 375$$

$$\text{PROFIT OF B} = \frac{2}{8} \times 1000$$

$$= \frac{2000}{8} = 250$$

$$\text{PROFIT OF C} = \frac{3}{8} \times 1000 = 375$$

∴ 375, 250, 375 by

Q3 A, B & C enter into partnership. A advance one-third of capital for one-third of time, B contributes one-sixth of capital or for one-third of the time C contributes the remaining capital for whole-time. How should the dividend of 1200.

Ans

A : B : C

$$\frac{1}{3} \times \frac{1}{3} : \frac{1}{6} \times \frac{1}{3} : \frac{1}{2} \times 1 (\text{whole time})$$

$$\frac{1}{9} : \frac{1}{18} : \frac{1}{2}$$

$$\therefore \text{C capital} = 1 - \frac{1}{3} - \frac{1}{6} \\ = \frac{1}{2}$$

$$\Rightarrow \frac{1}{9} \times 18 : \frac{1}{18} \times 18 : \frac{1}{2} \times 18$$

$$\Rightarrow 2 : 1 : 9 \quad (\text{Multiplying by 18 to balance the } \dots)$$

$$\therefore 2 : 1 : 9 \rightarrow 12 (\text{Total 12})$$

1200 divide $\frac{1}{2} : 1 : 9$

$$\therefore \text{A profit} = \frac{2}{12} \times 1200 = 200.$$

$$\text{B profit} = \frac{1}{12} \times 1200 = 100$$

$$O \text{ profit} = \frac{9}{12} \text{ profit} = 900.$$

2) 200, 100, 900.

Q Manoj got \$600 as his share out of total profit of \$900 which he and Ramesh earned at the end of one year. If Manoj invested \$20000 for 8 months, whereas Ramesh invested his amount for whole year, the amount invested by Ramesh was.

$$M : R$$

$$6000 : 3000 \quad (\text{total} = 9000)$$

$$2 : 1 \quad (\text{Ratio of profit}) - (1).$$

$$M : R$$

$$2000 \times 6 : x \times 12 \rightarrow (1). \quad (\text{Ratio of profit}).$$

$$\therefore \text{Profit} = \text{Ex time}.$$

$$M : \frac{2000 \times 6}{x \times 12} = \frac{2}{1}$$

$$\therefore x = 5000.$$

4) 5000. Q

Q A and B enter into partnership investing \$2000 and \$1600 resp. After 8 months, C also joins the business with a capital of \$1500. The share of C in profit of \$45600 after 2 yrs will be.

$$A : B : C \quad (\text{profit ratio})$$

$$2000 \times 24 : 1600 \times 24 : 1500 \times (24-8)$$

$$6 : 8 : 5 \quad \therefore \text{Total} = 19$$

The share of profit of C is $6+8+5 = 19$

$$= \frac{5}{19} \times 45000$$

$$= 12000$$

∴ 12000 ans

Q6 Kismat and Nandan started a joint firm. Kishan's investment was thrice investment of Nandan & period of his investment was two times period of investment of Nandan. Nandan got 4000 as profit.

Ans: $K : N$

$$3x2 : 1x1$$

$$6 : 1$$

$6x : x$ (Profit ratio)

$$\therefore N : = x = 4000$$

$$K = 6x = 6 \times 4000 = 24000$$

$$\therefore \text{TOTAL PROFIT} = 24000 + 4000$$

$$= 28000$$

∴ 28000 ans

Q7 A and B enter into a partnership with capitals in ratio of 5:9. At the end of 8 months, A withdraws his capital. If they receive p = 4:9 & B cap it is ?.

Ans $A : B$

$5x8 : 9xT_1$ (Profit ratio:

∴ They receive profit 4:9
then,

$$\frac{5x8}{9xT_1} = \frac{4}{9}$$

$$100 \times 9 = 4 \times 9 T$$

$$180 = 2600 : 34T$$

$$T = 10 \text{ months}$$

1) In months say
A started a business by investing 2700. After
some time B joined him by investing 2025.
At the end of one year, the profit was divided
in ratio 2:1. After how many months did B
join the business.

A : B

$$2700 \times 12 : 2025 \times T$$

$$\frac{2700 \times 12}{2025 \times T} = \frac{2}{1}$$

$$T = 8 \text{ months.}$$

$$12 \text{ Month - 8 months} = 4 \text{ months.}$$

1) 95 4 months.

Q) If A, B, C invested in ratio 1:2:3 the sharing of
their investments being the ratio 1:2:3.10
what ratio would their profit be distributed
in : A : B : C

$$1 \times 1 : 2 \times 1 : 3 \times 1$$

$$1 \times 1 : 2 \times 2 : 3 \times 3$$

1 : 4 : 9 (proportion)

2) 1 : 4 : 9 ans

Q10 A, B, C invested in ratio 2:5:7, the timing of their investments being in ratio 3:4:5. In what ratio would profit be distributed?

Ans

A : B : C be distributed

$$2 \times 3 : 5 \times 4 : 7 \times 5 \\ 6 : 20 : 35$$

$$6 : 20 : 35 \text{ any}$$

Q11 A, B, C invested capitals in ratio 4:5:6. At the end of business, they received profits in ratio 2:3:4. Find ratio of time before which they contributed their capitals.

Ans

A : B : C

$$4 \times T_1 : 5 \times T_2 : 6 \times T_3$$

: They get profit = 2 : 3 : 4

\therefore Profit = Investment \times Time.

$$\text{so, profit(A)} = I \times T,$$

$$2 = 4 \times T_1$$

$$T_1 = \frac{1}{2}$$

\therefore similarly for B & C.

$$3 = 5 \times T_2$$

$$T_2 = \frac{3}{5}$$

$$4 = 6 \times T_3$$

$$\frac{4}{3} = T_3$$

$$T_3 = \frac{2}{3}$$

$$\therefore T_1 : T_2 : T_3$$

$$= \frac{1}{2} : \frac{3}{5} : \frac{2}{3}$$

$$= 15 : 18 : 20 \text{ any}$$

$$= 15 : 18 : 20$$

$$= 15 : 18 : 20$$

4) 15 : 18 : 20 any

Q12 A, B & C invested capitals in ratio 4:6:9. At the end of business term, they received the profits in ratio 2:3:5. Find ratio of time.

$$\text{Ans} \quad A : B : C$$

$$4XT_1 : 6XT_2 : 9XT_3$$

Then,

$$\text{Profit are given } 2:3:5$$

so,

$$\text{Profit of A} = 2 = 4XT_1$$

$$T_1 = \frac{2}{4} = \frac{1}{2}$$

$$\text{Profit of B} = 3 = 6XT_2$$

$$\therefore \frac{3}{6} = T_2$$

$$T_2 = \frac{1}{2}$$

$$\text{Profit of C} = 5 = 9XT_3$$

$$= \frac{5}{9} = T_3$$

$$T_1 : T_2 : T_3$$

$$\Rightarrow \frac{1}{2} : \frac{1}{2} : \frac{5}{9} \quad (\text{Multiply by LCM. i.e., } 18)$$

$$\Rightarrow 9 : 9 : 10$$

$$4) 9:9:10 \quad \text{Ans}$$

Q13 A, B, & C invest capitals in a business. If ratio of their periods of investments are 2:3:6 and their profits are in ratio of 1:5:6. Find ratio in which investment are made by A, B & C.

$$\text{Ans} \quad A : B : C$$

$$1 \times 2 : 1 \times 3 : 1 \times 6$$

∴ Their profit are 4:5:6

∴ profit = investment × time

$$\therefore \text{For A} \Rightarrow 4 = T_1 \times 2$$

$$T_1 = \frac{4}{2} = 2$$

$$\star \text{ For } B \Rightarrow 5 = I_2 \times 3$$

$$I_2 = 5/3$$

$$\star \text{ For } C \Rightarrow 8 = I_3 \times 6$$

$$I_3 = 8/6 = 1$$

$$\underline{\text{So, }} I_1 : I_2 : I_3$$

$$\Rightarrow 2 : 5/3 : 1 \quad (\text{Multiply by LCM} = 3)$$

$$\Rightarrow 6 : 5 : 3$$

4) $6 : 5 : 3$ ans

Q14 A, B, C invest their capitals in business. If the ratios of their periods of investments are $7 : 3 : 5$ and their profits are in ratio $2 : 1 : 2$. Find ratio in which investment.

Ans $A : B : C$

$$I_1 \times 7 : I_2 \times 3 : I_3 \times 5$$

$$\therefore \text{Profit} = 2 : 1 : 2$$

$$\text{Profit} = \text{Investment} \times \text{Time}$$

$$\star \text{ For } A = 2 = I_1 \times 7$$

$$I_1 = 2/7$$

$$\star \text{ For } B = 1 = I_2 \times 3$$

$$I_2 = 1/3$$

$$\star \text{ For } C = 2 = I_3 \times 5$$

$$I_3 = 2/5$$

$$I_1 : I_2 : I_3$$

$$\text{or, } \frac{2}{7} : \frac{1}{3} : \frac{2}{5} \quad (\text{Multiply by LCM, P.E. 105})$$

$$\text{or, } 30 : 35 : 42$$

+) $30 : 35 : 42$ ans

Q10 A, B & C are partners. A receives $\frac{2}{7}$ of profit.
B & C share the remaining profit equally.
A's income increased by 240 when profit rises
from 10% to 15%. Find capital of B & C.

$$A : B : C \quad | \quad 1 - \frac{2}{7} = \frac{5}{7}$$

$$\frac{2}{7} : 5x : 5x \quad | \quad \text{divide equally}$$

then multiply by LCM. i.e. 14.

$$\Rightarrow \frac{2}{7} \times 14 : \frac{5}{14} \times 14 : \frac{5}{14} \times 14$$

$$\Rightarrow 4x : 5x : 5x \quad (\text{Profit ratio})$$

10% to 15%

240

$$\therefore 5x = 240$$

$$x = 240/5 = 48$$

$$A = 5 \times 100x = 4800$$

$$5x, 4x = 4800$$

$$+x = 1200$$

$$\begin{aligned} \therefore \text{For B & C Capital} &= 5x : 5x \\ &= 5x/1200 \\ &= 6000. \end{aligned}$$

4) 6000 am

Q10 A, B & C are partners. A receives $\frac{5}{8}$ of profit.
B & C share remaining profit equally.
A's share's income increase by 450 when the
profit rises from 4% to 9%. Find capitals
invested by B & C.

$$A : B : C \quad | \quad 1 - \frac{5}{8}$$

$$\frac{5}{8} : \frac{3}{16} : \frac{3}{16}$$

$$\begin{aligned} \frac{8-5}{8} &= \frac{3}{8} \text{ M.R.} \\ &= \frac{3}{8} \times 450 \\ &= 135 \end{aligned}$$

T6

Q) Multiply by its digits: 14 x 16.

$$\text{Q1, } \frac{5}{8} \times 16 : \frac{3}{16} \times 16 : \frac{3}{8} \times 16$$

$$\text{Q1, } 10x : 3x : 3x$$

$$\therefore 4 \text{ to } 9 \\ [5:1]$$

$$450$$

$$5x = 450$$

$$x = 450/5 \geq 90$$

$$A \geq 100x = 90,00$$

$$\text{so, } 10x = 90,00$$

$$x = 900$$

$$\text{so, for B & C Capital} = 3x = 3 \times 900 \\ = 2700$$

412700 qn

~~Q17~~ ~~Q18~~ Two partners invest 26000 & 16250 resp'dn business & agree that 40% of profit should be divided equally b/w them & remaining profit is to be treated as interest on capital. If one partner gets 450 more than other. Find total profit made in business.

A/B

A : B

$$26000 : 16250 \\ \rightarrow 8 : 5$$

100%

equal
40%

26%, 20%

Investment 60%

A : B
 $P_1 : P_2$

A : B :

$3 : 8 \rightarrow 3 \text{ unit gap.}$

\therefore Investment more

3 unit = 450

1 unit = $450/3 \Rightarrow 150$

\therefore Total = 13 unit (i.e. 8+5)

13 unit = 13×150

=

$\therefore 60\% = 13 \times 150$

$1\% = \frac{13 \times 150}{60}$

11% = 3250

Q18 Two partners invest 17000 & 13000 respectively in business and agree 70% of profit should divide equally them & remaining profit is to treated as interest on capital. If one partner gets 532 more than other, find total profit made in business.

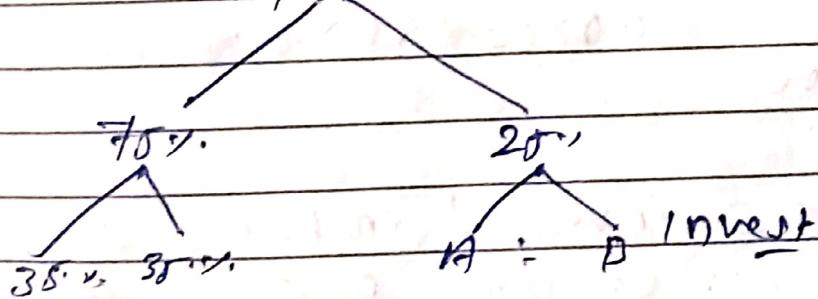
Ans A : B

17000 : 13000

17 : 13

then.

total profit 100%



$\therefore 17 : 13 \Rightarrow \text{gap} = 4 \text{ unit}$

so, 4 unit = 532

1 unit = 133

$$\text{Total unit} = 30 \text{ unit} = 133 \times 30 \\ = 3990$$

$$25\% = 3990$$

$$1\% = 3990 / 25 = 159.6$$

$$100\% = 159.6 \times 100 = 15960 \text{ ans}$$

4) 15960 ans

Q19 A & B invested in ratio 5:3 in business. If 10% of total profit goes to charity & A's share is 900, find total profit?

Ans

$$A : B$$

$$5 : 3$$

$$5x : 3x$$

$$5x = 900$$

$$1x = 180$$

$$8x = 180 \times 8$$

$$8x = 1440$$

total (100%)

10%
charity

90%
A : B

$$\therefore 90\% = 1440$$

$$1\% = \frac{1440}{90}$$

$$1\% = 16$$

$$100\% = 1600 \text{ ans}$$

1) 1600

Q20 A & B invested in ratio 4:9 in business.

If 8% of total profit goes to charity & A's share is 460, find total profit.

Ans

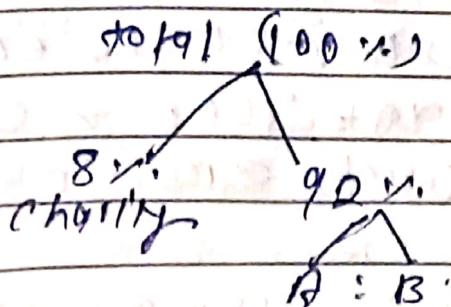
$$A : B$$

$$4 : 9$$

$$4x = 460$$

$$x = 115$$

$$\text{total } 13x = 115 \times 13 - \textcircled{1}$$



$$92\% = \frac{115 \times 13}{1495}$$

$$= \frac{115 \times 13}{92}$$

$$= 16.25 \times 100 = 1625$$

4) 1625 ac

Q21 Three partners A, B & C together invested 14400 in a business. At the end of year, A got 1200, B got 2500 & C got 3750 as profit. How much amount did C invest?

Ans $A : B : C$

$$= 1200 : 2500 : 3750 \quad \text{let time be } \frac{1}{3}$$

$$\text{Investment} = \frac{1200}{1} : \frac{2500}{1} : \frac{3750}{1}$$

$$= 25 : 50 : 75$$

$$= 1 : 2 : 3$$

14400

$$A : B : C$$

$$1 + 2 + 3 = 6$$

$$\text{total: 6 units} = 14400$$

$$1 \text{ unit} = 14400 / 6$$

$$3 \text{ unit} = ? \times \frac{7200}{14400}$$

3) 7200 a.m.

Q22 Three partners A, B & C together invested ~~922~~ 36000 in a business. At the end of year ~~922~~ A got 4200, B got 7000 & C got 9800 profit. How much amount did B invest?

Ans

$$A : B : C$$

$$I = \frac{4200}{t} : \frac{7000}{t} : \frac{9800}{t} \quad (\text{let } t = 1) \\ (I = \frac{P}{t})$$

$$= 840 : 1400 : 18960$$

$$= 168 : 280 : 392$$

$$= 84 : 140 : 196$$

$$= 42 : 70 : 98$$

$$= 3 : 5 : 7$$

$$\therefore \text{total} = 36000$$

$$01 3x + 5x + 7x = 36000$$

$$01 15x = 36000$$

$$x = 2400$$

$$\therefore 5x = 2400 \times 5$$

$$= 12000$$

2) 12000 a.m.

Q23 A puts 375 more in business than B but B has invested his capital for 4 months while A has invested his for 8 months. If the share of A is 75 more than B out of total profit 128.

Ans

$$A : B$$

find capital ratio

$$\text{profit} = 8x(x+375) : x \times 4 \quad \text{but it is B.}$$

~~E~~ ~~D~~

$$\text{Profit} (P+75) + P = 125$$

$$\therefore P + 75 + P = 125$$

$$P = 25$$

$$A = 125 - 25$$

$$B = \underline{\underline{25}}$$

EQUATION APPROX.

$$\text{or } \frac{(x + 275) \times 2}{x + 4} = \frac{100}{28}$$

$$\therefore 2x = 275$$

$$\therefore x = \underline{\underline{137.5}}$$

If A and B invest 3000 and 4000 in business. A receives 10 per month out of profit. A removes 10 for running business & rest of profit is divided in proportion to investments. If A gets 390 monthly, what does B receive.

$$\begin{array}{l} \text{Ans} \quad A : B \\ = 3000 : 4000 \\ \text{profit} \quad 3 : 4 \end{array}$$

$$A = 10 \times 12 = 120 \text{ rs.}$$

due to investment, he will get

$$\Rightarrow 390 - 120 \\ = 270 \text{ rs.}$$

$$\therefore 3x = 270$$

$$x = 90$$

$$\therefore 4x = 4 \times 90 = 360.$$

$\therefore 360 \text{ ans}$

Q26 A sum of Money is to be divided among A, B, C in ratio 2:3:7. If total share of A & B is 1500 less than C. What is A's share.

Ans

$$A : B : C$$

$$2 : 3 : 7$$

$\underbrace{5 \text{ unit}}_{\text{5 unit}} \quad 1 \text{ unit}$

$$\text{less} = 7 - 5 = 2 \text{ unit}$$

$$2 \text{ unit} = \cancel{700} \quad 1500$$

$$1 \text{ unit} =$$

$$1 \text{ unit} = 750$$

$$\text{so, share of A} = 2x = 2 \times 750 \\ = 1500$$

2) 1500