

Partnership



~ Quantitative Aptitude · SSC Exams ~

← circled = key info!



When two or more people run a business together, the profit (or loss) is split in the ratio of each partner's **capital × time**. That single idea powers the whole chapter.

① The Basic Idea & Vocabulary

- **Partner** → a person who invests money (capital) in the joint business.
- **Investment / Capital** → the amount of money a partner puts in.
- **Period** → the length of time for which the capital stays in the business.
- **Working (active) partner** → manages the business; may take a **salary / commission** for the effort.
- **Sleeping (dormant) partner** → only invests money, takes no part in running it.



Golden rule → **Profit share** $\propto$ **Capital × Time**. Everything in this chapter is just this rule dressed up in a story.

② Simple Partnership

When all partners invest for the **same time**, profit is shared in the ratio of their **capitals**.

Same time → $P_1 : P_2 = C_1 : C_2$

Profit divides exactly like the money invested. (no time factor needed)

Worked example – A puts ₹5000, B puts ₹8000

Ratio → $5000 : 8000 = 5 : 8$ (both stayed the same period).

If profit = ₹1300 → sum of terms = $5 + 8 = 13$.

$A = 5/13 \times 1300 = ₹500$ · $B = 8/13 \times 1300 = ₹800$. 

③ Compound Partnership ⌚

When both the **capital** and the **time** differ, profit is shared in the ratio of **(Capital × Time)**.

$$P_1 : P_2 = C_1 T_1 : C_2 T_2$$

Multiply each partner's money by the months it stayed — then simplify. (this is the master formula)

Worked example 1 — A: ₹6000 / 5 months, B: ₹4000 / 8 months

$$C \times T \rightarrow A = 6000 \times 5 = 30000 \quad \cdot \quad B = 4000 \times 8 = 32000.$$

$$\text{Ratio} \rightarrow 30000 : 32000 = \mathbf{15 : 16}.$$

$$\text{If profit} = \mathbf{₹6200} \text{ (sum 31)} \rightarrow A = 15/31 \times 6200 = \mathbf{₹3000}, B = 16/31 \times 6200 = \mathbf{₹3200}.$$



Worked example 2 — A: ₹8000 / 6 months, B: ₹9000 / 4 months

$$C \times T \rightarrow A = 8000 \times 6 = 48000 \quad \cdot \quad B = 9000 \times 4 = 36000.$$

$$\text{Ratio} \rightarrow 48000 : 36000 = \mathbf{4 : 3}.$$

$$\text{If profit} = \mathbf{₹2100} \text{ (sum 7)} \rightarrow A = 4/7 \times 2100 = \mathbf{₹1200}, B = 3/7 \times 2100 = \mathbf{₹900}. \quad \checkmark$$



Simple partnership is just compound partnership with equal times — the equal T cancels, leaving only the capital ratio. One formula rules both!

Set it out as a table

Partner	Capital (₹)	Time (mo.)	$C \times T$
A	6000	5	30000
B	4000	8	32000
Ratio	$30000 : 32000 = 15 : 16$		

Compound Partnership – more practice

Worked example 3 – A: ₹12000 / 8 mo., B: ₹15000 / 6 mo.

$C \times T \rightarrow A = 12000 \times 8 = 96000 \cdot B = 15000 \times 6 = 90000.$

Ratio $\rightarrow 96000 : 90000 = 16 : 15.$

If profit = ₹6200 (sum 31) $\rightarrow A = 16/31 \times 6200 = \text{₹}3200, B = 15/31 \times 6200 = \text{₹}3000.$



Worked example 4 – A: ₹7500 / 12 mo., B: ₹9000 / 10 mo.

$C \times T \rightarrow A = 7500 \times 12 = 90000 \cdot B = 9000 \times 10 = 90000.$

Ratio $\rightarrow 90000 : 90000 = 1 : 1$ – equal shares despite different money!

If profit = ₹7000 $\rightarrow$ each gets ₹3500.



More money for less time can equal less money for more time – always compare the product $C \times T$, never the capital alone.

Try these – build the ratio

A ₹5000/4mo, B ₹4000/10mo

$\rightarrow 20000 : 40000 = 1 : 2$

A ₹3000/6mo, B ₹2000/9mo

$\rightarrow 18000 : 18000 = 1 : 1$

A ₹10000/3mo, B ₹6000/10mo

$\rightarrow 30000 : 60000 = 1 : 2$

A ₹9000/8mo, B ₹12000/6mo

$\rightarrow 72000 : 72000 = 1 : 1$

Worked example 5 – find a partner's exact rupee share

A: ₹16000 / 3 mo., B: ₹12000 / 8 mo. Total profit ₹7000.

$C \times T \rightarrow 48000 : 96000 = 1 : 2$ (sum 3). $A = 1/3 \times 7000 = \text{₹}2333.33?$ – not clean, so exam data is usually chosen to divide evenly.

Cleaner: profit ₹6900 $\rightarrow A = 1/3 \times 6900 = \text{₹}2300, B = 2/3 \times 6900 = \text{₹}4600.$

④ Find the Time / Find the Capital

"Equal-profit" problems reverse the formula. If two partners must get **equal** shares, then $C_1T_1 = C_2T_2$.

$$\text{Equal shares} \Rightarrow C_1T_1 = C_2T_2$$

- Missing time $\rightarrow T_2 = C_1T_1 / C_2$
- Missing capital $\rightarrow C_2 = C_1T_1 / T_2$

Worked example 1 – find the time

A invests ₹5000 for 12 months. B invests ₹6000. For what time must B invest so that both get **equal** profit?

$$\text{Set equal} \rightarrow 5000 \times 12 = 6000 \times T \Rightarrow 60000 = 6000 T.$$

$$\text{Solve} \rightarrow T = 60000 / 6000 = \mathbf{10 \text{ months.}} \quad \checkmark$$

Worked example 2 – find the capital

A invests ₹4000 for 8 months. B invests for 4 months. They earn **equal** profit. Find B's capital.

$$\text{Set equal} \rightarrow 4000 \times 8 = C_B \times 4 \Rightarrow 32000 = 4 C_B.$$

$$\text{Solve} \rightarrow C_B = 32000 / 4 = \mathbf{₹8000.} \quad \checkmark$$

Worked example 3 – the other partner's time

B invests ₹4000 for 9 months. A invests ₹3000. For equal shares, how long must A stay?

$$\text{Set equal} \rightarrow 3000 \times T = 4000 \times 9 = 36000 \Rightarrow T = 36000 / 3000 = \mathbf{12 \text{ months.}} \quad \checkmark$$



Smaller capital must stay **longer**; larger capital can stay **shorter** – the two $C \times T$ products always balance.

Find Time / Capital – when the shares are in a ratio

If the profits are not equal but in a given **ratio**, use $C_1T_1 : C_2T_2 = \text{required ratio}$.

Worked example 4 – ratio of shares fixes the time

A invests ₹6000 for 12 months, B invests ₹8000. Their profits are in ratio **3 : 2**. Find B's time.

Set up → $(6000 \times 12) / (8000 \times T) = 3/2 \Rightarrow 72000 / 8000T = 3/2$.

Cross-multiply → $2 \times 72000 = 3 \times 8000T \Rightarrow 144000 = 24000T$.

Solve → $T = \mathbf{6 \text{ months}}$. ✓

Worked example 5 – find the capital from a ratio

A invests ₹5000 for 8 months; B invests for 10 months. Profits share **2 : 3**. Find B's capital.

Set up → $(5000 \times 8) : (C_B \times 10) = 2 : 3 \Rightarrow 40000 / 10C_B = 2/3$.

Cross-multiply → $3 \times 40000 = 2 \times 10C_B \Rightarrow 120000 = 20C_B$.

Solve → $C_B = \mathbf{₹6000}$. ✓



Write the two $C \times T$ products, put them equal to the profit ratio, cross-multiply – one unknown, one equation.

Try these

A ₹8000/12mo, B ₹12000/? for equal share

→ $T = 96000/12000 = \mathbf{8 \text{ mo}}$.

A ₹10000/6mo, B ₹? / 4mo, equal share

→ $C = 60000/4 = \mathbf{₹15000}$

A ₹7000/9mo, B ₹9000/? equal share

→ $T = 63000/9000 = \mathbf{7 \text{ mo}}$.

A ₹6000/10mo, B ₹? /12mo, equal share

→ $C = 60000/12 = \mathbf{₹5000}$



Always convert years/parts of years into the **same unit** (usually months) before multiplying – mixing units is the top silly mistake.

⑤ Capital Changed Part-way

If a partner adds or withdraws money during the year, split the year into intervals, find **capital × months** for each, and **add** them.

Weight = $\sum$ (Capital in each interval × its months)

These "capital-months" (money-units) become the partner's single term in the ratio.

Worked example 1 – one partner's weight

A keeps ₹10000 for 4 months, then raises it to ₹15000 for the next 8 months.

Interval 1 → $10000 \times 4 = 40000$.

Interval 2 → $15000 \times 8 = 120000$.

Weight → $40000 + 120000 = 160000$ capital-months. ✓

Worked example 2 – full problem with a second partner

A as above (weight 160000). B invests ₹12000 for the whole 12 months. Profit = ₹3800.

B's weight → $12000 \times 12 = 144000$.

Ratio → $160000 : 144000 = 10 : 9$ (sum 19).

Shares → $A = 10/19 \times 3800 = ₹2000$, $B = 9/19 \times 3800 = ₹1800$. ✓



A withdrawal works the same way – just use the smaller capital for the later interval, then add.

Worked example 3 – a withdrawal

A starts with ₹20000; after 7 months withdraws ₹5000 (leaving ₹15000) for the last 5 months.

Weight = $20000 \times 7 + 15000 \times 5 = 140000 + 75000 = 215000$ capital-months.

Capital Change – both partners vary

Worked example 4 – both change mid-year

A starts ₹15000; after 4 months adds ₹3000 ($\rightarrow$ ₹18000). B starts ₹18000; after 4 months withdraws ₹3000 ($\rightarrow$ ₹15000). Year = 12 mo. Profit ₹16500.

$$A \rightarrow 15000 \times 4 + 18000 \times 8 = 60000 + 144000 = 204000.$$

$$B \rightarrow 18000 \times 4 + 15000 \times 8 = 72000 + 120000 = 192000.$$

$$\text{Ratio} \rightarrow 204000 : 192000 = 17 : 16 \text{ (sum 33)}.$$

$$\text{Shares} \rightarrow A = 17/33 \times 16500 = \text{₹}8500, B = 16/33 \times 16500 = \text{₹}8000. \quad \checkmark$$

Worked example 5 – a partner joins later

A invests ₹21000 for the whole year. B joins after 4 months with ₹36000. Profit ₹15000.

$$A \rightarrow 21000 \times 12 = 252000, B \rightarrow 36000 \times 8 = 288000.$$

$$\text{Ratio} \rightarrow 252000 : 288000 = 7 : 8 \text{ (sum 15)}.$$

$$\text{Shares} \rightarrow A = 7/15 \times 15000 = \text{₹}7000, B = 8/15 \times 15000 = \text{₹}8000. \quad \checkmark$$



"Joins after 4 months" of a 12-month year means the newcomer's money works only 8 months – count carefully!

Try these – weights

₹8000/3mo then ₹12000/9mo

$$\rightarrow 24000 + 108000 = 132000$$

₹5000/6mo then ₹8000/6mo

$$\rightarrow 30000 + 48000 = 78000$$

₹9000/5mo then ₹6000/7mo

$$\rightarrow 45000 + 42000 = 87000$$

₹12000 whole year (joins at 0)

$$\rightarrow 12000 \times 12 = 144000$$

⑥ Working Partner – Salary / Commission

A working partner is paid **first** (a fixed salary, or a % of profit for managing). Deduct it, then divide the **remaining** profit in the capital-time ratio.

Step order

1. Take out salary / commission of the working partner.
2. Divide the **rest** in the C×T ratio.
3. Working partner's total = his salary + his ratio-share.

Worked example 1 – commission as a % of profit

A (₹9000) and B (₹6000) invest for equal time. A manages and takes **10%** of profit as commission. Total profit ₹4000.

Commission → 10% of 4000 = ₹400 (to A).

Remaining → $4000 - 400 = 3600$, split $9000:6000 = 3 : 2$.

A's ratio-share = $3/5 \times 3600 = 2160$; B = $2/5 \times 3600 = 1440$.

Totals → A = $400 + 2160 = \text{₹}2560$, B = $\text{₹}1440$. ✓

Worked example 2 – salary to the manager

Capitals in ratio 3 : 5. B is working partner and takes **15%** of profit as salary. Profit ₹9600.

Salary → 15% of 9600 = ₹1440 (to B).

Remaining → $9600 - 1440 = 8160$ in 3 : 5 (sum 8).

A = $3/8 \times 8160 = 3060$; B's ratio-share = $5/8 \times 8160 = 5100$.

Totals → A = $\text{₹}3060$, B = $1440 + 5100 = \text{₹}6540$. ✓



Never split the whole profit first – the salary / commission always comes off the top before the ratio division.

Salary / Commission – more types

Worked example 3 – fixed monthly salary

A and B each invest ₹15000 for a year. A manages and draws a salary of ₹500 per month; the rest is shared by capital (equal here). Year profit ₹18000.

Salary → $500 \times 12 = ₹6000$ (to A).

Remaining → $18000 - 6000 = 12000$, split 1 : 1 → ₹6000 each.

Totals → $A = 6000 + 6000 = ₹12000$, $B = ₹6000$. ✓

Worked example 4 – charity / donation off the top

A (₹50000) and B (₹60000) invest for a year. 5% of profit goes to charity; the rest in capital ratio. Profit ₹22000.

Charity → 5% of 22000 = ₹1100.

Remaining → $22000 - 1100 = 20900$ in 50:60 = 5 : 6 (sum 11).

$A = 5/11 \times 20900 = ₹9500$, $B = 6/11 \times 20900 = ₹11400$. ✓

check → $9500 + 11400 + 1100 = 22000$ ✓

Worked example 5 – commission, three partners

A, B, C invest ₹40000, ₹50000, ₹60000 for a year. C manages and takes 10% commission. Profit ₹33000.

Commission = $10\% \times 33000 = 3300$ (to C). Remaining 29700 in 4:5:6 (sum 15).

$A = 4/15 \times 29700 = 7920$, $B = 5/15 \times 29700 = 9900$, C-share = $6/15 \times 29700 = 11880$.

Totals → $A = ₹7920$, $B = ₹9900$, $C = 3300 + 11880 = ₹15180$. ✓



Salary, commission or charity – all are simply subtracted before the C×T ratio does its job. Same three steps every time.

⑦ Three or More Partners

Extend the same ratio to three (or more) terms. Any one share = (his ratio term / sum of terms) $\times$ total profit.

$$\text{Share of } X = (\text{term}_X / \sum \text{terms}) \times \text{Total Profit}$$

$$P_A : P_B : P_C = C_A T_A : C_B T_B : C_C T_C$$

Worked example 1 – same time

A, B, C invest ₹4000, ₹5000, ₹6000 for the same period. Profit ₹4500.

Ratio $\rightarrow 4 : 5 : 6$ (sum 15).

$$A = 4/15 \times 4500 = \text{₹}1200, B = 5/15 \times 4500 = \text{₹}1500, C = 6/15 \times 4500 = \text{₹}1800. \quad \checkmark$$

Worked example 2 – different capital & time

A: ₹5000/6mo, B: ₹6000/5mo, C: ₹4000/9mo. Profit ₹3200.

C $\times$ T $\rightarrow 30000 : 30000 : 36000 = 5 : 5 : 6$ (sum 16).

$$A = 5/16 \times 3200 = \text{₹}1000, B = \text{₹}1000, C = 6/16 \times 3200 = \text{₹}1200. \quad \checkmark$$

Worked example 3 – capitals given as multiples

A invests 3 times as much as B, and B invests 2/3 of what C invests (same time). Profit ₹5500.

Let $C = 3k \rightarrow B = 2/3 \times 3k = 2k, A = 3 \times 2k = 6k$. Ratio A:B:C = **6 : 2 : 3** (sum 11).

$$A = 6/11 \times 5500 = \text{₹}3000, B = 2/11 \times 5500 = \text{₹}1000, C = 3/11 \times 5500 = \text{₹}1500. \quad \checkmark$$



When capitals are given as multiples, put the smallest as a variable (like k), express the rest, then reduce – the k cancels in the ratio.

⑧ Working Backwards & Loss

From **one** partner's share you can recover the **total** profit or a missing **capital**. Loss is shared in exactly the same ratio as profit.

Worked example 1 – total profit from one share

Profit is shared $A : B : C = 3 : 4 : 5$. A's share is ₹2400. Find the total.

A's fraction → $3 / (3+4+5) = 3/12$. So $3/12 \times \text{Total} = 2400$.

Total → $2400 \times 12/3 = \text{₹9600}$ (then $B = \text{₹3200}$, $C = \text{₹4000}$). ✓

Worked example 2 – find a capital from the shares

A and B invest for the same time. A invests ₹6000 and earns ₹1800; B earns ₹2400. Find B's capital.

Same time → profit ratio = capital ratio ⇒ $1800 : 2400 = 3 : 4 = 6000 : C_B$.

Solve → $C_B = 6000 \times 4/3 = \text{₹8000}$. ✓

Worked example 3 – sharing a LOSS

A (₹7000) and B (₹5000) invest for the same time. The business loses ₹1800.

Ratio → $7 : 5$ (sum 12).

A's loss = $7/12 \times 1800 = \text{₹1050}$, B's loss = $5/12 \times 1800 = \text{₹750}$. ✓

Worked example 4 – difference of shares gives the total

Profit ratio $A : B : C = 2 : 3 : 5$. C's share exceeds A's by ₹1800. Find total profit.

$C - A = (5 - 2)/10$ of total = $3/10 \times \text{Total} = 1800 \Rightarrow \text{Total} = \text{₹6000}$.

∴ $A = \text{₹1200}$, $B = \text{₹1800}$, $C = \text{₹3000}$. ✓



Profit & loss follow the **same** ratio – a loss is just a negative profit. Never re-derive a new ratio for a loss.

⑨ Monthly-Equivalent Trick

Reduce **every** partner to a single "capital $\times$ months" number, then simplify the whole set at once by dividing out the common factor.

Money-units = Capital $\times$ Months

List each partner's money-units, cancel the common factor $\rightarrow$ that IS the profit ratio.

Worked example 1

A: ₹6000/5mo, B: ₹7500/4mo, C: ₹9000/3mo. Profit ₹5800.

Money-units $\rightarrow$ 30000, 30000, 27000. Divide by 3000 $\rightarrow$ **10 : 10 : 9** (sum 29).

$A = 10/29 \times 5800 = \text{₹}2000$, $B = \text{₹}2000$, $C = 9/29 \times 5800 = \text{₹}1800$. ✓

Worked example 2

P: ₹6000/5mo, Q: ₹5000/6mo, R: ₹4000/3mo. Profit ₹4800.

Money-units $\rightarrow$ 30000, 30000, 12000. Divide by 6000 $\rightarrow$ **5 : 5 : 2** (sum 12).

$P = 5/12 \times 4800 = \text{₹}2000$, $Q = \text{₹}2000$, $R = 2/12 \times 4800 = \text{₹}800$. ✓

Try these – simplify to the ratio

₹4000/6, ₹6000/4, ₹8000/3
 $24000:24000:24000 = \text{1:1:1}$

₹5000/4, ₹4000/10, ₹2000/5
 $20000:40000:10000 = \text{2:4:1}$

₹3000/8, ₹4000/6, ₹6000/2
 $24000:24000:12000 = \text{2:2:1}$

₹10000/3, ₹6000/5, ₹9000/2
 $30000:30000:18000 = \text{5:5:3}$



Drop the shared zeros first (6000 $\rightarrow$ 6, etc.) to keep the numbers small – then the common factor is easy to spot.

More Solved Examples

Ex 1 – profit-sharing ratio

A and B start with ₹28000 and ₹35000 (same time). Ratio = $28000 : 35000 = 4 : 5$.

Ex 2 – three equal-time partners

A, B, C invest ₹20000, ₹25000, ₹15000. Profit ₹36000. Ratio $4 : 5 : 3$ (sum 12).

$A = 4/12 \times 36000 = ₹12000$, $B = ₹15000$, $C = 3/12 \times 36000 = ₹9000$.

Ex 3 – capital raised mid-year

A: ₹12000 for 6 mo. then ₹16000 for 6 mo.; B: ₹18000 all year. Profit ₹8000.

$A = 12000 \times 6 + 16000 \times 6 = 72000 + 96000 = 168000$; $B = 18000 \times 12 = 216000$.

Ratio $168000 : 216000 = 7 : 9$ (sum 16) $\rightarrow A = 7/16 \times 8000 = ₹3500$, $B = ₹4500$.

Ex 4 – find the time for equal profit

A: ₹9000 for 12 mo.; B: ₹12000 for T months, equal profit.

$9000 \times 12 = 12000 \times T \Rightarrow 108000 = 12000T \Rightarrow T = 9 \text{ months}$.

Ex 5 – working partner's commission

A (₹16000) and B (₹12000) invest for equal time. B manages, takes 12.5% commission. Profit ₹5600.

Commission = $12.5\% \times 5600 = 700$ (to B). Remaining 4900 in $16:12 = 4:3$ (sum 7).

$A = 4/7 \times 4900 = ₹2800$; $B = 700 + 3/7 \times 4900 = 700 + 2100 = ₹2800$.

Ex 6 – three partners, capital & time differ

A: ₹6000/12mo, B: ₹8000/6mo, C: ₹12000/4mo. Profit ₹4200.

$C \times T \rightarrow 72000 : 48000 : 48000 = 3 : 2 : 2$ (sum 7).

$A = 3/7 \times 4200 = ₹1800$, $B = 2/7 \times 4200 = ₹1200$, $C = ₹1200$.

More Solved Examples – contd.

Ex 7 – sharing a loss (three partners)

A, B, C invest ₹5000, ₹6000, ₹9000 (same time). Loss ₹2000. Ratio 5 : 6 : 9 (sum 20).

$$A = 5/20 \times 2000 = \text{₹}500, B = 6/20 \times 2000 = \text{₹}600, C = 9/20 \times 2000 = \text{₹}900.$$

Ex 8 – total profit from a difference

Profit ratio 2 : 3 : 5. C's share is ₹1800 more than A's. Find total.

$$(5 - 2)/10 \times \text{Total} = 1800 \Rightarrow 3/10 \text{ Total} = 1800 \Rightarrow \text{Total} = \text{₹}6000 \text{ (A 1200, B 1800, C 3000)}.$$

Ex 9 – find the missing capital

A: ₹15000 for 8 mo.; B: for 12 mo., profit shared equally. Find B's capital.

$$15000 \times 8 = C_B \times 12 \Rightarrow 120000 = 12C_B \Rightarrow C_B = \text{₹}10000.$$

Ex 10 – monthly-equivalent, three partners

P: ₹6000/5mo, Q: ₹5000/6mo, R: ₹4000/3mo. Profit ₹4800.

$$\text{Units } 30000 : 30000 : 12000 = 5 : 5 : 2 \text{ (sum 12)} \rightarrow P = \text{₹}2000, Q = \text{₹}2000, R = \text{₹}800.$$

Ex 11 – partner joins later

A: ₹30000 all year; B joins after 6 mo. with ₹45000. Profit ₹14000.

$$A = 30000 \times 12 = 360000; B = 45000 \times 6 = 270000. \text{ Ratio } 4 : 3 \text{ (sum 7)}.$$

$$A = 4/7 \times 14000 = \text{₹}8000, B = 3/7 \times 14000 = \text{₹}6000.$$

Ex 12 – total from one share

A : B : C = 5 : 6 : 4. B's share is ₹3000. Find total & C's share.

$$6/15 \times \text{Total} = 3000 \Rightarrow \text{Total} = 3000 \times 15/6 = \text{₹}7500; C = 4/15 \times 7500 = \text{₹}2000.$$



Every one of these reduces to: build $C \times T$ ratio $\rightarrow$ use share = term/sum $\times$ total. One toolkit, many disguises.

Higher-Level Solved Examples Σ

H1 – both capital and time change, plus a join

A starts ₹30000 for the full year. B joins after 3 months with ₹40000 for the rest. Profit ₹15000.

$A = 30000 \times 12 = 360000$; $B = 40000 \times 9 = 360000$. Ratio 1 : 1 $\rightarrow$ each gets **₹7500**.

H2 – capitals given only as relations

A invests 3 $\times$ as much as B; B invests $\frac{2}{3}$ of C's capital (same time). Profit ₹5500.

Let $C = 3k \rightarrow B = 2k$, $A = 6k \Rightarrow 6 : 2 : 3$ (sum 11) $\rightarrow A = \text{₹}3000$, $B = \text{₹}1000$, $C = \text{₹}1500$.

H3 – charity off the top, then ratio

A (₹50000) & B (₹60000), one year. 5% of profit to charity, rest in capital ratio. Profit ₹22000.

Charity = 1100; remaining 20900 in 5 : 6 (sum 11) $\rightarrow A = \text{₹}9500$, $B = \text{₹}11400$.

H4 – both partners add / withdraw mid-year

A: ₹15000 for 4 mo. then ₹18000 for 8 mo. B: ₹18000 for 4 mo. then ₹15000 for 8 mo. Profit ₹16500.

$A = 60000 + 144000 = 204000$; $B = 72000 + 120000 = 192000 \rightarrow 17 : 16$ (sum 33).

$A = 17/33 \times 16500 = \text{₹}8500$, $B = 16/33 \times 16500 = \text{₹}8000$.

H5 – commission + three partners

A, B, C: ₹40000, ₹50000, ₹60000 (one year). C manages, 10% commission. Profit ₹33000.

Commission 3300; remaining 29700 in 4 : 5 : 6 (sum 15) $\rightarrow A = 7920$, $B = 9900$, C-share = 11880.

Totals $\rightarrow A = \text{₹}7920$, $B = \text{₹}9900$, $C = \text{₹}15180$.

H6 – ratio fixes the total from one man's money

A: ₹6000 for 8 mo.; B: ₹8000 for the whole year. If B receives ₹6000, find the total profit.

$A = 48000$, $B = 96000 \rightarrow 1 : 2$. $B = \frac{2}{3}$ of total = 6000 $\Rightarrow$ Total = **₹9000** (A gets ₹3000).

Practice Set

1. A ₹4000, B ₹6000, same time. Ratio?
2. A ₹5000, B ₹8000. Profit ₹1300. B's share?
3. A ₹6000/5mo, B ₹4000/8mo. Ratio?
4. A ₹8000/6mo, B ₹9000/4mo. Ratio?
5. A ₹5000/12mo, B ₹6000/T, equal. T?
6. ₹10000/4mo then ₹15000/8mo. Units?
7. A, B, C ₹4000, 5000, 6000. Profit ₹4500. C?
8. A ₹9000, B ₹6000; A gets 10% of ₹4000 + share. A total?
9. A:B:C = 3:4:5, A's share ₹2400. Total?
10. A ₹7000, B ₹5000. Loss ₹1800. A's loss?
11. A ₹6000/5, B ₹7500/4, C ₹9000/3. Ratio?
12. A ₹4000/8mo, B for 4mo, equal. B's capital?
13. A ₹21000 all yr, B ₹36000 after 4mo. Ratio?
14. Ratio 2:3:5, C - A = ₹1800. Total profit?
15. A ₹6000/12, B ₹8000/6, C ₹12000/4. Ratio?

Answer Key – with working

- 1 → 2:3 (4000:6000) · 2 → ₹800 (8/13 × 1300) · 3 → 15:16 (30000:32000) · 4 → 4:3 (48000:36000) · 5 → 10 mo. (60000/6000) · 6 → 160000 (40000+120000) · 7 → ₹1800 (6/15 × 4500) · 8 → ₹2560 (400 + 3/5 × 3600) · 9 → ₹9600 (2400 × 12/3) · 10 → ₹1050 (7/12 × 1800) · 11 → 10:10:9 (30000:30000:27000) · 12 → ₹8000 (32000/4) · 13 → 7:8 (252000:288000) · 14 → ₹6000 (3/10 Total = 1800) · 15 → 3:2:2 (72000:48000:48000).

Quick Revision

- ✓ Same time → ratio = capitals. Time differs → ratio = $C \times T$. Loss splits like profit.
- ✓ Equal shares $\Rightarrow C_1T_1 = C_2T_2$. Capital changes → add capital-months per interval.
- ✓ Salary / commission / charity come **off the top**; then Share = (term/sum) × remaining profit.

☆ Capital × time – share the profit right! ☆