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3. Partnership

① capital
② Time
③ Profit
④ Profit distribution ↓

① A B
200 300
2 : 3 — Profit distribution ration

② A —4month→ B
~~200×12~~ ~~300×8~~
2 : 2
1 : 1 — Profit distribution ration depends on how much period invested.

1) A and B invest in a business in the ratio 3 : 2. If 5% of the total Profit goes to charity and A's share is Rs.855, the total Profit is :-

⇒

A B
Investemen ratio → 3 : 2
Profit Ration is same

suppose total profit 100
charity 5%
5 — 95 ← 19 ← 5
A B 3 : 2
855 ← 57 38
15 ← 1

Total profit = 15 × 100 = 1500

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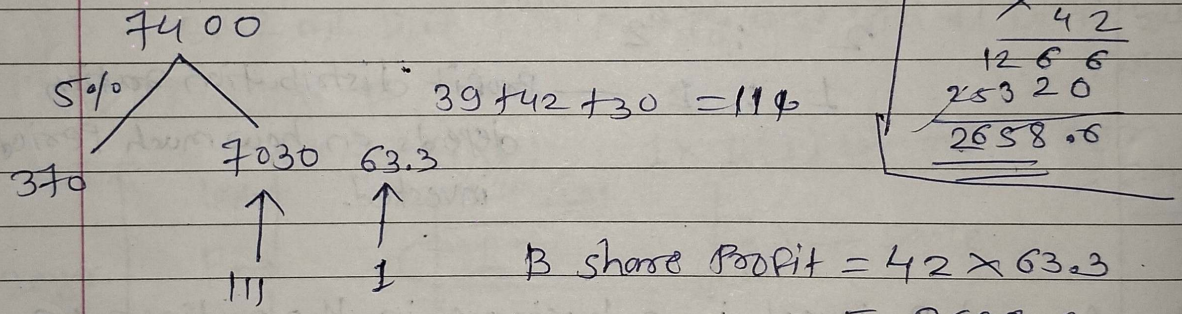
2) A, B and C jointly thought of engaging themselves in a business venture. It was agreed that A would invest Rs. 6500 for 6 months, B is Rs. 8400 for 5 months and C is Rs. 10,000 for 3 months. A wants to be the working member for which, he was to receive 5% of the Profits. The profit earned was Rs. 7400. Calculate the share of B in the Profit.

⇒

A	B	C
~~6500~~ × ~~6~~	~~8400~~ × ~~5~~	~~10,000~~ × 3
13 × 3	42 × 1	20 10

39 : 42 : 30



B share Profit = 42 × 63.3

= 2658.6

3) A, B and C enter into a partnership in the ratio 7/2 : 4/3 : 6/5. After 4 months, A increases his share 50%. If the total profit at the end of one year be Rs. 21,600 then B's share in the Profit.

⇒

A	B	C
~~10~~ $\frac{7}{2}$ × 30	$\frac{4}{3}$ × 30	$\frac{6}{5}$ × 30 ← ratio can not fraction

105 is 50% = 52.5

Increase 50%

A	B	C
105×4^1	40×12^3	36×12^3
$105 + 52.5$		
$= 157.5 \times 8_2$		
A	B	C
105	120	108
+315		
420 :	120 :	108

Divide by 12

35 : 10 : 9

Total Profit → 21600 = total of ratio

21600 ⟵ 54

400 ⟵ 1

B's share profit = 10×400

$= 4000$

4) A, B, C subscribe Rs. 50,000 for a business. A subscribes Rs. 4000 more than B and B Rs. 5000 more than C. Out of a total profit of Rs. 35,000 A receives.

→

A ⟵ +4000 B ⟵ +5000 C

A	B	C
$x + 9000$	$x + 5000$	x

$3x + 14000 = 50,000$

$3x = 36000$

$x = 12000$

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A ← +4000 B ← +5000 C

x+9000 x+5000 x

21000 17000 12000

21 : 17 : 12

Total Profit = 35000 = total of ratio

35000 ← 50

700 ← 1

A receives = 21 × 700

= 14700

5) Three partners shared the profit in a business in the ratio 5:7:8. They had partnered for 14 months, 8 months and 7 months respectively. what was the ratio of their investments?

⇒

In = Investment
P = Profit
T = Time

$In \times T = P$

$In = \frac{P}{T}$

	A	B	C
In →	$\frac{5}{14} \times 56$	$\frac{7}{8} \times 56$	$\frac{8}{7} \times 56$
Time →	14	8	7
P →	5	7	8

20 : 49 : 56

Investment ratio

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6) A starts business with Rs. 3500 and after 5 months B joins with A as his partner. After a year, the profit is divided in the ratio 2:3. what is B's contribution in the capital? A

⇒

A —5 month→ B

In → $\frac{3500 \times 12}{500\ 6}$: $x \times 7$,

P → $\frac{2}{1}$: 3

divide in triangle

$(500 \times 6) \times 3 = 9000$

$x = 9000$

$\frac{3500 \times 12}{x \times 7} = \frac{2}{3}$

$\frac{500 \times 12}{x} = \frac{2}{3}$

$500 \times 12 \times 3 = 2 \times x$

$\frac{500 \times 6 \times 3}{x_1} = x$

$500 \times 6 \times 3 = x$

$x = 9000$

7) A and B entered into partnership with capitals in the ratio 4:5. After 3 months, A withdrew 1/4 of his capital and B withdrew 1/5 of his capital. The gain at the end of 10 months was Rs. 760. A's share in this profit is:

⇒

Total months 10 months

A : B

$(4 \times 3 + (4-1) \times 7) : (5 \times 3 + (5-1) \times 4 \times 7)$

$4 \times \frac{1}{4} = 1$

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

withdrew after 3 months

12 + 21 : 15 + 28

33 : 43

10 month end → 760 = total of ratios (33+43) = 76

76 → 760

1 → 10

A's share = $33 \times 10 = 330$

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8] A and B started a partnership business investing some amount in the ratio of 3:5. C joined then after six months with an amount equal to that of B. In what proportion should the profit at the end of one year be distributed among A, B and C?

⇒

A B $\xrightarrow{6 \text{ month}}$ C

$3 \times \frac{12}{2} : 5 \times \frac{12}{2} : 5 \times 6$,

$6 : 10 : 5$ ← Profit ratio.

9] A, B, C rent a pasture. A puts 10 oxen for 7 months, B puts 12 oxen for 5 months and C puts 15 oxen for 3 months for grazing. If the rent of the pasture is Rs. 175, how much must C pay as his share of rent?

⇒

A	B	C
$\frac{10}{2} \times 7$	$12 \times \frac{5}{1}$	$\frac{15}{3} \times 3$
14	12	9

Total rent = Rs. 175 = Total of ratio $(14+12+9) = 35$

$35 \longrightarrow 175$

$1 \longrightarrow 5$ $\quad \frac{175}{35} = 5$

C's share of rent $= 9 \times 5 = 45$

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10) A and B started a business in partnership investing Rs. 20,000 and Rs. 15,000 respectively. After six months, C joined them with Rs 20,000. What will be B's share in total profit of Rs. 25,000 earned at the end of 2 years from the starting of the business?

⇒

A . B —(6 months)→ C

20,000 × 2 yr : 15000 × 2 yr : 20,000 × 1.5 yr

40 : 30 : 30

4 : 3 : 3

Total Profit = 25,000 = Total of ratio (4+3+3) = 10

10 ⟶ 25,000

1 ⟶ 2500

B's share = 3 × 2500

= 7500

11) A began a business with Rs. 85,000. He was joined afterward by B with Rs. 42,500. for how much Period does B join, if the profits at the end of the year are divided in the ratio of 3:1?

⇒

	A	B
In →	85000	42500
	2 × 12 / 4	1 × x

P → 3 : 1

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Shortcut

A: 85000, 2 × 12 = 24

B: 42500, 1 × x

8 : x

x : 1

x = 8 months

method - 2:-

$\frac{24}{x} = \frac{3}{1}$

$24 \times 1 = 3 \times x$

$\frac{24 \times 1}{3} = x$

$8 = x$

x = 8 months

12) Aman started a business investing Rs. 70,000. Rakhi joined him after six months with an amount of Rs. 1,05,000 and Sagar joined them with Rs. 1.4 lakhs after another six months. The amount of profit earned should be distributed in what ratio among Aman, Rakhi and Sagar respectively, 3 years after Aman started the business?

⇒

A —6 months→ R —6 months→ S

70,000 : 1,05,000 : 1,40,000

$\frac{70}{10} \times 3yr : \frac{105}{15} \times 2.5yr : \frac{140}{20} \times 2yr$

30 : 37.5 : 40

multiply by 2 because ratio cannot be in decimal

60 : 75 : 80

divide by 5

12 : 15 : 16

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13) Arun, Kamal and vinay invested Rs. 8000, Rs. 4000 and Rs. 8000 respectively in a business. Arun left after six months. If after eight months there was a gain of Rs. 4005, then what will be the share of kamal?

⇒

A	K	V
8000	4000	8000

8 : 4 : 8

Kamal left 6 month and business run 8 months

$8 \times 6 : 4 \times 8 : 8 \times 8$

1 3 2 1 1 4

3 : 2 : 4

Profit gain = 4005 = total Ratio sum (3+2+4) = 9

9 ⟶ 4005

$\frac{4005}{9} = 445$

1 ⟶ 445

Kamal shares = 2×445

= 890