

## PARTNERSHIP

If two or more people together do a business then it is called a partnership. Each person who invests the money is called a partner. The money contributed by each person is called his capital (C).

If each person contributes only one capital for the same time period then it is called a simple partnership. In a simple partnership the profit/loss is divided in the ratio of the capitals.

If the partners contribute different capitals for different time periods or at least one partner contributes two or more capitals for different time periods then the partnership will be considered as a compound partnership.

In compound partnership the profit or loss will be divided in the ratio of monthly equivalent investment (MEI).

MEI is equal to the product of capital of a person and the respective investment period.

If a person just invests the money but doesn't take care of day to day activities of a business is called a sleeping partner. The person who actually takes care of the day to day activities business is called an active partner. An active partner will be paid a monthly salary or a part of gross profit at the end of business term.

**Important Tip:** In every question whether the partnership is simple or compound always take the ratio of capitals including advances and withdrawals and then replace the capitals with the respective terms of the ratio.

## PROBLEMS

1. Rajan and Sajan started a business initially with ₹ 14,200 and ₹ 15,600 respectively. If the total profit is ₹ 74,500. What is Rajan's share in the profit?  
1) ₹ 39,000      2) ₹ 39,600      3) ₹ 35,000      4) ₹ 35,500      5) None of these

**ANSWER: 4**

Capital's ratio of Rajan and Sajan = 14200 : 15600 = 71 : 78

∴ Their profit's ratio = 71 : 78

$$\text{Ranjan's profit} = \frac{74500}{(71+78)} \times 71 = \frac{74500}{149} \times 71 = 35,500$$

2. A and B enter into a partnership by making investments in the ratio 1 : 2, 5% of the total profit goes to charity. If B's share is ₹ 760 total profit is:  
1) ₹ 1200      2) ₹ 1800      3) ₹ 2400      4) ₹ 1560      5) None of these

**ANSWER: 1**

Let profit be 100%

Profit to be distributed by A and B = 100% - 5% = 95%

∴ Capitals are in the ratio 1 : 2, they must distribute the profits in the ratio of 1 :

2

$$\therefore \text{B's share} = \frac{95\%}{(1+2)} \times 2 = \frac{190\%}{3}$$

$$\Rightarrow \frac{190\%}{3} \longrightarrow 960$$

$$100\% \longrightarrow ? = \frac{760 \times 100\%}{\left(\frac{190\%}{3}\right)} = \frac{760 \times 300}{190} = 1200$$

3. Prakash, Sunil and Anil started a business jointly investing ` 11 lakh, ` 16.5 lakh and ` 8.25 lakh respectively. the profit earned by them in the business at the end of 3 years was 19.5 lakh. What will be the 50% of Anil's share in the profit?

- 1) ` 4.5 lakh    2) ` 2.25 lakh    3) ` 2.5 lakh    4) ` 3.75 lakh    5) None of these

**ANSWER: 2**

Capital's ratio of Prakash, Sunil and Anil = 11 : 16.5 : 8.25 = 44 : 66 : 33 = 4 : 6 : 3  
Since all of them invest for the same time periods (3 years) there partnership is a simple one.

∴ Profit's ratio = Capital's ratio = 4 : 6 : 3

Total profit = 19.5 lakhs

$$\therefore \text{Anil's share} = \left(\frac{19.5}{4+6+3}\right) \times 3 = \frac{19.5}{13} \times 3 = 4.5$$

$$\therefore 50\% \text{ of Anil's share} = \frac{4.5}{2} = 2.25$$

4. A, B, C and D enter into a partnership investing ` 3000, C invests twice as much as D. B invests twice as much as C and A invests twice as much as B. Find B's share of the annual profit of ` 1250?

- 1) ` 300    2) ` 400    3) ` 550    4) ` 600    5) None of these

**ANSWER: 4**

Let D = 1, C = 2 × 1 = 2, B = 2 × 2 = 4, A = 2 × 4 = 8

⇒ A : B : C : D = 8 : 4 : 2 : 1

$$\therefore \text{B's share in the profit of ` 2250} = \left(\frac{2250}{8+4+2+1}\right) \times 4 = \frac{2250}{15} \times 4 = 600$$

5. A, B and C enter into a partnership with certain capital in which A's contribution is ` 10000. If out of total profit of ` 1000, A gets ` 500, B gets ` 300 then C's capital is:

- 1) ` 4000    2) ` 3600    3) ` 4400    4) ` 4800    5) None of these

**ANSWER: 1**

Profit's ratio of A : B : C = 500 : 300 : 200 = 5 : 3 : 2

∴ Capital's ratio of A : B : C = 5 : 3 : 2

$$\Rightarrow \text{C's capital} = \frac{10000}{5} \times 2 = 4000$$

6. A and B started a business by investing ` 50000 and ` 60000 respectively. A receives  $12\frac{1}{2}\%$  of the profit for managing the business and the rest is divided in proportion to their capitals. Find the share of each in a profit of ` 8800?  
 1) ` 4200      2) ` 4300      3) ` 4400      4) ` 4500      5) None of these

**ANSWER: 1**

Capital's ratio of A and B = 50000 : 60000 = 5 : 6

Money received by A for managing the business =  $12\frac{1}{2}\% \times 8800 = \frac{1}{8} \times 8800 = 1100$

Profit to be distributed = 8800 - 1100 = 7700

$\Rightarrow$  B's share =  $\frac{7700}{(5+6)} \times 6 = \frac{7700}{11} \times 6 = 4200$

7. X, Y and Z were sharing profits in the ratio 4 : 3 : 2. Y retired from the firm and X and Z decide to share profits in the ratio 3 : 2. Calculate the gaining ratio –  
 1) 7 : 8      2) 5 : 9      3) 4 : 7      4) 5 : 8      5) None of these

**ANSWER: 1**

Let the total profit be L.C.M of [(4 + 3 + 2), (3 + 2)] = L.C.M OF (9, 5) = 45

Before Y's retirement:

$$\text{X's share} = \frac{45}{4+3+2} \times 4 = \frac{45}{9} \times 4 = 20, \quad \text{Z's share} = \frac{45}{9} \times 2 = 10$$

After Y's retirement:

$$\text{X's share} = \frac{45}{5} \times 3 = 27, \quad \text{Z's share} = \frac{45}{5} \times 2 = 18$$

Gain ratio = (27 - 20) : (18 - 10) = 7 : 8

8. Sarita started a boutique investing an amount of ` 50,000. Six months later Neeta joined her with an amount of ` 80,000. At the end of one year they earned a profit of ` 18,000. What is Sarita's share in the profit?  
 1) ` 9,000      2) ` 8,000      3) ` 12,000      4) ` 10,000      5) None of these

**ANSWER: 4**

Capital's ratio of Sarita and Neeta = 50000 : 80000 = 5 : 8

Sarita invested her capital for 12 months and Neeta for (12 - 6) = 6 months

	Sarita	Neeta
Capitals (C) $\rightarrow$	5	8
Time (T) $\rightarrow$	12	6
MEI (C×T) $\rightarrow$	(5×12)	(8×6)

Profit's ratio = 60 : 48 = 5 : 4

$\therefore$  Sarita's share =  $\frac{18000}{(5+4)} \times 5 = \frac{18000}{9} \times 5 = 10,000$

9. Gina invests ` 48,000 to start a business. Four months later Shrayon joins her by investing ` 62,000 and another two months later Deepika joins them both by investing ` 80,000. At the end of one year the business earns a profit of ` 20,661. What is Deepika's share in the profit?

- 1) ` 7,668      2) ` 6,603      3) ` 7,240      4) ` 6,390      5) None of these

**ANSWER: 4**

Capital's ratio = 48000 : 62000 : 80000 = 24 : 31 : 40

So take their capitals as 24, 31 and 40

Gina invests capital for 12 months, Shrayon for 12 - 4 = 8 months and Deepika for 8 - 2 = 6 months

	Gina	Shrayon	Deepika
C →	24	31	40
T →	12	8	6
MEI →	(24×12)	(31×8)	(40×6)

Profit's ratio = 24×12 : 31×8 : 40×6  
= 36 : 31 : 30

$$\therefore \text{Deepika's share} = \frac{20661}{97} \times 30 = 213 \times 30 = 6390$$

10. Sidhartha opened a shop by investing ` 2700. After sometime Piyush joined him by investing ` 2025. At the end of one year, the profit was divided in the ratio of 2 : 1. After how many months did Piyush join the business?

- 1) 3 months      2) 4 months      3) 5 months      4) 8 months      5) None of these

**ANSWER: 2**

Capital's ratio = 2700 : 2025 = 4 : 3

So take the capitals of Sidhartha and Piyush as 4 and 3

Let Piyush joins the business after  $x$  months, then he invests his money for  $(12 - x)$  months

	Sidharth	Piyush
C →	4	3
T →	12	(12 - x)
MEI →	(4×12)	3×(12 - x)

Profit's ratio = 4×12 : 3×(12 - x) = 16 : (12 - x)

$$\Rightarrow 16 : (12 - x) = 2 : 1$$

$$\Rightarrow (12 - x) \times 2 = 16 \times 1$$

$$(12 - x) = \frac{16}{2} = 8 \Rightarrow x = 4$$

11. A person P started a business with a capital of ` 2525 and another person Q joined P after some months with a capital of ` 1200. Out of the total annual profit of ` 1644, P's share was ` 1212. When did Q join as partners?

- 1) After 2 months      2) After 3 months      3) After 4 months      4) After 5 months  
5) None of these

**ANSWER: 2**

Capital's ratio of P and Q = 2525 : 1200 = 101 : 48

So take P's capital as 101 and Q's capital as 48.

R's profit = 1212

$$\Rightarrow \text{Q's profit} = 1644 - 1212 = 432$$

Profit's ratio of P and Q = 1212 : 432 = 303 : 108 = 101 : 36

Let Q joined after  $x$  months then he invests for  $(12 - x)$  months

	P	Q
C	→ 101	48
T	→ 12	$(12 - x)$
MEI	→ $(101 \times 12)$	$48 \times (12 - x)$

Profit's ratio =  $101 \times 12 : 48 \times (12 - x)$   
 $\Rightarrow 101 \times 12 : 48 \times (12 - x) = 101 : 36$   
 $\therefore 101 \times 12 \times 36 = 48 \times (12 - x) \times 101$   
 $x = 12 - 9 = 3$

12. Ninad, Vikas and Manav enter into a partnership. Ninad invests some amount at the beginning. Vikas double the amount after 6 months and Manav invests thrice the amount invested by Ninad after 8 months. They earn a profit of ₹ 45,000 at the end of the year. What is Manav's share in the profit?

- 1) ₹ 25,000      2) ₹ 15,000      3) ₹ 12,000      4) ₹ 9,000      5) None of these

**ANSWER: 2**

Capital's ratio of Ninad, Vikas and Manav = 1 : 2 : 3

But they invest the capitals for 12,  $12 - 6 = 6$  and  $12 - 8 = 4$  months respectively.

So their MEI's will be  $1 \times 12 = 12$ ,  $2 \times 6 = 12$  and  $3 \times 4 = 12$  respectively.

$\therefore$  Profits ratio =  $12 : 12 : 12 = 1 : 1 : 1$

$$\Rightarrow \text{Manav's share} = \frac{45000}{(1+1+1)} \times 1 = 15,000$$