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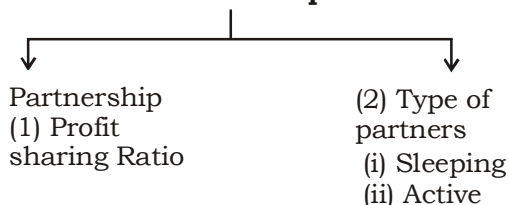
PARTNERSHIP

♦ When two or more than two persons run a business together, then it is called partnership and the persons are called partners.

Partnership

Partnership
(1) Profit sharing Ratio

(2) Type of partners
(i) Sleeping
(ii) Active

(1). **Profit sharing Ratio** : The profit is shared between partners in the ratio of the product of money and the time duration.

e.g. A invests Rs. 12000 for 5 months and B invests Rs. 6000 for 10 months then the ratio of their profit

A		B
12000×5		6000×10
60	:	60
1	:	1

(2) **Type of Partners**

(i) **Sleeping Partner** : This type of partners put only money. So they only get the profit in the ratio of money invested.

(ii) **Active Partner** : This type of partners not only put their money but also run the business and they get extra profit for doing so according to conditions, and the remaining profit is shared in the ratio of their capital.

Example

1. Rakesh Yadav and Bhuvnesh started a business by investing ` 36,000 and ` 63,000. Find the share of each, out of the annual profit of ` 5500.

   (a) ` 2000, ` 3500
   (b) ` 2500, ` 3500
   (c) ` 3500, ` 2500
   (d) None of these

Sol. (a)

   Rakesh Yadav : Bhuvnesh

   Capital → 36,000 : 63,000

           4 : 7

   Note → When time is same then profit will divided in the ratio of their capital.

   ∴ (4 + 7) units = ` 5500

   11 units = ` 5500

   1 unit = ` $\dfrac{5500}{11}$ = ` 500

   Share of Rakesh Yadav
   = 500 × 4 = ` 2000

   Share of Bhuvnesh
   = 500 × 7 = ` **3500**

2. A starts a business with ` 50,000. After 3 months B joins him with ` 70,000. At the end of the year, in what ratio should they share the profit ?

   (a) 12 :13   (b) 13 : 12
   (c) 11 : 15   (d) 20 : 21

Sol. (d)

	A	:	B
Capital →	50,000		70,000
	5	:	7
Time →	12		9
Profit →	60	:	63
	20	:	21

   Required Ratio of Profits
   = 20 : 21

3. Rakesh Yadav started a business by investing ` 36,000. After 4 months Bhuvnesh joined him with some investment. At the end of the year, the total profit was divided between them in the ratio 9 : 7 How much capital was invested by Bhuvnesh in the business?

   (a) ` 40,000      (b) ` 42,000
   (c) ` 41,000   (d) None of these

Sol. (b) Let the capital invested by Bhuvnesh be ` x

	Rakesh Yadav	:	Bhuvnesh
Capital →	36,000	:	x
Time →	12	:	8
	3	:	2
Profit →	1,08,000	:	$2x$

   According to the question,

   $\dfrac{1,0,8000}{2x} = \dfrac{9}{7}$

   $x = \dfrac{108,000}{18} \times 7 = 42,000$

   Required investment by Bhuvnesh = ` **42,000**

Alternate:-

   Note :- To save your valuable time in such type of question try to use below given formula.

   $\dfrac{C_1 \times T_1}{C_2 \times T_2} = \dfrac{P_1}{P_2}$

$1\ C_2$ are the capi-

time periods.

profits.

⌐ invested by
x

$$\frac{36000 \times 12}{x \times 8} = \frac{9}{7}$$

$x = $ `42000`

4. A started some business with ` 26,000. After 3 months B joined him with ` 16,000. After some more time C joined them with ` 25,000. At the end of the year, out of the total profit of ` 15,453, C gets ` 3825 as his share. How many months after B joined the business, did C join?

(a) 3   (b) 4
(c) 5   (d) None of these

Sol. (a)

	A	:	B	:	C
Capital →	26000	:	16000	:	25000
	26	:	16	:	25
Time →	12	:	9	:	T
Profit →	312	:	144	:	25T

According to the question,
$(312 + 144 + 25T)$ units $= 15,453$

$$1 \text{ unit} = \frac{15,453}{(456 + 25T)}$$

$$\text{Share of C} = \frac{15,453}{(456 + 25T)} \times 25T$$

$$= \frac{15,453}{(456 + 25T)} \times 25T = 3825$$

Note: Because C's share = ` 3825.

$101T = 456 + 25T$

$76\ T = 456$

$T = 6$ months

Required time $= (9 - 6) = 3$ months

Therefore, C joined 3 months after B joined.

5. A, B and C started a business with their investments in the ratio 1 : 2 : 4. After 6 months A invested half the more amount as before and B invested the same amount as before while C withdrew $\frac{1}{4}$th of the his investment. Find the ratio of their profits at the end of the year.

(a) 5 : 12 : 13   (b) 5 : 11 : 14
(c) 5 : 12 : 14   (d) None of these

Sol. (c) Note: We can assume values as per our need but the ratio of values should not be changed.

A : B : C

Initial capital → $2x : 4x : 8x$

Total capital invested by A
$= (2x \times 6 + 3x \times 6) = 30x$

Total capital invested by B
$= (4x \times 6 + 6 \times 8x) = 72x$

Total capital invested by C
$= (6 \times 8x + 6x \times 6)$
$= (48x + 36x) = 84x$

New ratio of capitals:

A : B : C

Capital →	$30x$: $72x$: $84x$
Profit →	5 : 12 : 14

Note : Profit would be divided in the ratio of their capitals.
Required ratio of their profit
$= 5 : 12 : 14$

6. A started a business with ` 52,000 and after 4 months B joined him with `.39,000. At the end of the year, out of the total profit B received total ` 20,000 including 25% of the profit as commission for managing the business. What amount did A receive ?

(a) ` 20,000    (b) `10,000
(c) `15,000   (d) None of these

Sol. (a)

	A	:	B
Capital →	52,000	:	39,000
	4	:	3
	12	:	8
	3	:	2
Profit →	12	:	6
	2	:	1

Let profit of A be 200 units and profit of B be 100 units.

Total profit = 300 units

For Managing business B

received $= \frac{300 \times 25}{100} = 75$ units

Note : Remaining profit will be divided in the ratio of their capitals.

∴ Profit of A $= \frac{225}{3} \times 2 = 150$ units

Profit of B $= \frac{225}{3} \times 1 = 75$ units

Total profit of B $= (75 + 75)$
           $= 150$ units

According to the question,
150 units $= $ ` 20,000

$$1 \text{ unit} = ` \frac{20,000}{150}$$

$$150 \text{ units} = ` \frac{20,000}{150} \times 150$$

$= $ ` **20,000 = Profit of A**

7. A working partner gets 20% as his commission of the profit after his commission is paid. If the working partner's commission is ` 8000, Then what is the total profit in the business?

(a) ` 47,000    (b) ` 45,000
(c) ` 48,000   (d) None of these

Sol. (c) Let the total proft = ` k.

According to the question,

Remaining profit after paying 20% to working

Partner as commission = (k – 8000)

∴ $(k - 8000) \times \frac{20}{100} = 8000$

$k = 48000$

∴ Total profit = ` **48000**

8. Rakesh Yadav Reader publication makes a profit of 9,00,000, 20% of which is paid as taxes. If the rest is divided among the partners P,Q and R in the ratio $1 : 1\frac{1}{2} : 2$, then the shares of P, Q and R are respectively :

(a) ` 2,40,000;   ` 3,20,000; ` 1,60,000
(b) ` 3,20,000;   ` 2,40,000; ` 1,60,000

)0; ` 3,20,000;
)

)0; ` 2,40,000;
)

P : Q : R

`1 : $\frac{3}{2}$: 2

Profit→ 2 : 3 : 4

Note : Profit would be divided in the ratio of their capitals.

Profit = $(2x + 3x + 4x) = 9x$ units

According to the question,

$9x = 9,00,000 \times \frac{80}{100}$

$9x = 72,00,00$

$x = 8,00,00$

Profit of P = $2x = 2 \times 80,000$

= ` 1,60,000

Profit of Q = $3x = 3 \times 80,000$

= ` 2,40,000

Profit of R = $4x = 4 \times 80,000$

= ` 3, 20,000

9. We have to divide a sum of ` 13,950 among three peons A, B and C. B must get the double of A's share and C must get ` 50 less than the double of B's share. The share of A will be :
(a) ` 1950    (b) ` 1981.25
(c) ` 2000    (d) ` 2007.75

Sol. (c) Let the share of A = ` x

According to the question,

A : B : C

Capital→ x $2x$: $(4x – 50)$

$(x + 2x + 4x – 50) = 13,950$

$7x – 50 = 13,950$

$7x = 14000$

$x = 2000$

Share of A = ` **2000**

10. X and Y are partners in a business. They invest in the ratio 5 : 6, at the end of 8 months X withdraws. If they receive profits in the ratio 5 : 9. Find how long Y's investment was used?
(a) 12 months (b) 10 months
(c) 15 months (d) 14 months

Sol. (a) Let Y's investment is used

for T months → Now by using formula.

$\frac{5 \times 8}{6 \times T} = \frac{5}{9}$

T = 12 months

11. A, B and C subscribe . 47000 for a business. If A subscribes ` 7,000 more than B and B ` 5,000 more than C, then out of total profit of . 4700, C receives.
(a) ` 1200    (b) ` 4500
(c) ` 1000   (d) None of these

Sol. (c) Let C subscribes the business = ` x

A : B : C

Capital→$(x + 12000):(x+ 5000): x$

Note : Profit would be divide in the ratio of their capitals.

According to the question,

$(x + 12000) + (x + 5000) + x$ = 47000

$3x + 17000 = 47000$

$3x = 30000$

$x = 10,000$

A : B : C

Capital→ $22,000 : 15000 : 10000$

Profit → 22 : 15 : 10

(22 + 15 + 10) units = 4700

1 unit = $\frac{4700}{47}$ = 100

Share of C = 10 units = 10 × 100

= ` **1000**

12. ` 11250 are divided among A, B and C so that A may receive one half as much as B and C together receive and B receives one-fourth of what A and C together receive. The share of A is more than that of B by.
(a) ` 2500    (b) ` 1500
(c) ` 1800    (d) ` 650

Sol. (b)   A : B+C

$1_{\times 5}$: $2_{\times 5}$........(I)

B : A+C

$1_{\times 3}$: $4_{\times 3}$........(II)

Note: The total sum of A, B and C will be same. so equate the

sum of both the eqations.

After that new ratio,

A : B+C

5 : 10........(III)

B : A+C

3 : 12........(IV)

From equation (iii) and (iv)

A : B : C

5 : 3 : 7

According to the question,

(5 + 3 +7) units = ` 11250

15 units = ` 11250

1 unit = ` 750

Difference in shares of A and B

= (5 – 3) × 750 = ` 1500

13. X and Y enter into a partnership with their capitals in the ratio 7 : 9. At the end of 8th month, X withdraws his capital. If they receive the profits in the ratio 8 : 9, Find how long Y's capital was used.
(a) 4 months (b) 6 months
(c) 7 months (d) 8 months

Sol. (c) Let the y's capital was used for T months.

According to the question,

$\frac{7 \times 8}{9 \times T} = \frac{8}{9}$

T = **7 months**

Hence capital of Y was used for 7 months.

14. The investments made by X and Y are in the ratio 3 : 2. If 5% of total profit is donated and A gets ` 8,550 as his share of porfit then what is the amount of total profit.
(a) ` 14000    (b) ` 15,000
(c) ` 11,050    (d) ` 12,020

Sol. (b) Let the total profit = 100 units

Remaining profit after donation

= $100 - \frac{100 \times 5}{100}$ = 95 units

$$\frac{95}{3+2)} \times 3 = 57 \text{ units}$$

the question,

3550

$$\frac{0}{57}$$

$$100 \text{ units} = \frac{8550}{57} \times 100 = \textbf{15000}$$

Alternate : X : Y

3 : 2

3 units = ` 8550

$$1 \text{ unit} = ` \frac{8550}{3} = ` 2850$$

5 units = 2850 × 5 = ` **14250**

Note : 5 % of total profit is donated

∴ 95 % of total profit = ` 14250

$$1 \% \text{ of total profit} = ` \frac{14250}{95}$$

100 % of total profit

$$= ` \frac{14250}{95} \times 100 = ` \textbf{15,000}$$

15. Rakesh Yadav and Bhuvnesh are two partners in a firm sharing the profit in the ratio 4 : 5. If the firm earns a profit of `14,130, then profit to be received by Bhuvnesh
(a) `6,280 (b) `7,850
(c) `1,570 (d) `3,140

Sol. (b)

  Rakesh Yadav : Bhuvnesh

    4 : 5

According to the questionm,

 (4+5) units = `14,130

$$1 \text{ unit} = ` \frac{14,130}{9} = ` 1570$$

5 units = 5 × 1570 = `7850

\ Hence the share of Bhuvnesh = `**7850**

16. A and B take a grass ground on lease for ` 300 for grazing their animals. If A grazes 10 animals for 5 weeks and B grazes 15 animals for 7 weeks. The ratio in which they should divide the rent is:

(a) 1 : 2 (b) 10 : 21
(c) 11 : 20 (d) 2 : 1

Sol. (b) Total Rent = `300

	X	Y
No. of Animals	10	15
Time (in weeks)		
Ratio of Rent	5	7

$$\frac{5}{50} : \frac{7}{105}$$

10 : 21

17. A started a business by investing some money and B invested 5000 more than A. A remained in business for 5 months and B remained in business for one month more than A. out of the total profit of 26000, B got 6000 more than A . Find the capitals invested by A and B.
(a) `29,000,18,000
(b) `25,000,`30,000
(c) `15,000,`10,000
(d) `15,000,`20,000

Sol. (d) Let amount invested by A = ` x

    A : B

Capital → x : (x + 5000)

According to the question,

Share of A in profit

$$= \frac{(26000 - 6000)}{2} = `10,000$$

Share of B in profit

= (26000 − 10000) = ` 16,000

By using formulaes:

$$\boxed{\frac{C_1 \times T_1}{C_2 T_2} = \frac{P_1}{P_2}}$$

$$\frac{x \times 5}{(x + 5000) \times 6} = \frac{10,000}{16,000}$$

4x = 3x + 15000

x = ` 15000

Required capital of A = ` 15,000
Required capital of B
= (15,000 + 5000) = ` 20,000

18. A and B started a business in partnership by investing Rs.10,000 and Rs. 4000 respectively. condition of partnership is that B got Rs.100 per month for management of the business. After paying 5% interest on the capital, annual profit has

been distributed in the ratio of their investments. Find the share of their profit, if the annual profit is Rs. 4000.
(a) `3000 each (b) `2500 each
(c) `1500 each (d) `2000 each

Sol. (d) B's profit share in 1 year =12 × 100 = Rs. 1200

Interest of A

$$= \frac{10,000 \times 5 \times 1}{100} = \text{Rs. } 500$$

$$\text{Interest of B} = \frac{4000 \times 5 \times 1}{100}$$

    = Rs. 200

Total profit of A and B
= (1200 + 500 + 200) = Rs. 1900
Remaining profit
= (4000 – 1900) = Rs. 2100

Note: Remaining profit will be divide in the ratio of their profit.

      A : B

Capital =10,000 : 4000

      5 : 2

Share of A in remaining profit

$$= \frac{2100}{(5+2)} \times 5 = \text{Rs. } 1500$$

Share of B in Remaining profit

$$= \frac{2100}{(5+2)} \times 2 = \text{Rs. } 600$$

Total profit of A = 500 + 1500
      = Rs. 2000
Total profit of B = 1200 + 600 + 200 = Rs. 2000

19. A starts a business with Rs.1000 B joins him after 6 months with Rs. 4000. C puts a sum of Rs. 5000 for 4 months only. At the end of the year the business gave a profit of Rs. 2800. How should the profit be divided among them?
(a) Rs. 600, Rs. 1200, Rs. 1000
(b) Rs. 800, Rs. 600, Rs. 1400
(c) Rs. 1000, Rs. 1200,Rs. 600
(d) Rs. 1200, Rs. 600, Rs. 1000

Sol. (a) According to the question,

	B	C
	)00×6	: 5000×4

: 5 = 14 units = 2800
1 unit = 200

× 200 = Rs. 600

× 200 = Rs. 1200

× 200 = Rs. 1000

20. A and B enter into a partnership for a year. A contributes Rs. 3000 and B Rs. 4000. After 4 months they admit C, who contributes Rs. 4500. If B withdraws his contribution after 6 months, how would they share a profit of Rs. 1000 at the end of the year?

(a) Rs. 250, Rs. 200, Rs. 550

(b) Rs. 150, Rs. 200, Rs. 650

(c) Rs. 375, Rs. 250, Rs. 375

(d) Data inadequate

Sol.(c)

	A	:	B	:	C
Invest.	3000	:	4000	:	4500
Time	12	:	6	:	8
Profit	3000×12	:	4000×6	:	4500×8
	3	:	2	:	3

8 units = 1000

1 unit = $\dfrac{1000}{8}$ = 125

Profit of A = 3×125 = 375

Profit of B = 2×125 = 250

Profit of C = 3×125 = 375

21. A, B and C enter into a partnership. A contributes one-third of the capital for one-third of the time. B contri butes one-sixth of the capital for one-third of the time C contributes the remaining capital for the whole time. How should they divide a profit of Rs. 1200.

(a) Rs. 300, Rs. 200, Rs. 700

(b) Rs. 200,Rs. 100,Rs. 900

(c) Rs. 375, Rs250, Rs. 575

(d) Rs. 385, Rs 255, Rs. 475

Sol. (b)

	A		B		C
Invest ®	$\dfrac{1}{3}$	:	$\dfrac{1}{6}$	$\left[1-\left\{\dfrac{1}{3}+\dfrac{1}{6}\right\}\right]=\dfrac{1}{2}$	
Time ®	$\dfrac{1}{3}$	:	$\dfrac{1}{3}$	:	1
Profit ®	$\dfrac{1}{3}\times\dfrac{1}{3}$	:	$\dfrac{1}{3}\times\dfrac{1}{6}$	:	$\dfrac{1}{2}\times 1$
	$\dfrac{1}{9}$	:	$\dfrac{1}{18}$	:	$\dfrac{1}{2}$
	2	:	1	:	9=12

Q   12 Units = 1200

\   1 Unit = 100

Profit of A = 2 × 100 = Rs. 200

Profit of B = 1 × 100 = Rs. 100

Profit of C = 9 × 100 = Rs. 900

22. Manoj got Rs. 6000 as his share out of the total profit of Rs. 9000 which he and Ramesh earned at the end of one year. If Manoj invested Rs. 20,000 for 6 months, where as Ramesh invested his amount for the whole year, the amount invested by Ramesh was

(a) Rs. 60,000 (b) RS. 10,000

(c) Rs. 40,000 (d) RS. 5000

Sol. (d)

	M	:	R
Profit ®	6000	:	3000
	2	:	1
Time ®	6	:	12
Invest. ®	$\dfrac{2}{6}$	:	$\dfrac{1}{12}$
	4	:	1

4 units ® 20000

1 unit = 5000

Ramesh's invested

= 1 × 5000 = Rs.5000

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23. A and B enter into partnership investing Rs. 12000 and Rs. 16000 respectively After 8 months, C also joins the business with a capital of Rs. 15000. The share of C in a profit of Rs. 45,600 after 2 years will be

(a) Rs. 12000 (b) Rs. 14,400

(c) Rs. 19,200 (d) Rs. 21,200

Sol. (a)

	A	:	B	:	C
Invest.	12000×24	:	16000×24	:	15000×16
Profit	6	:	8	:	5

19 units ® 45600

1 unit ® = 2400

C's Amount = 5 × 2400

= Rs. 12000

24. A started a business by investing Rs. 2700. After sometime B joined him by investing Rs. 2025. At the end of one year, the profit was divided in the ratio 2 : 1. After how many months did B join the business?

(a) 4 Months (b) 6 Months

(c) 3 Months (d) 2 Months

Sol. (a) According to the question,

	A	:	B
Invest.	2700×12	:	2025×T
Profit	2	:	1
	2700×6	:	2025×T

T = $\dfrac{2700\times 6}{2025}$

T = 8 months

Hence B joints after 4 months

25. A, B and C invested in the ratio 1 : 2 : 3; the timing of their investments being in the ratio 1 : 2 : 3. In what ratio would thier profit be distributed?

(a) 3 : 2 : 1   (b) 1 : 2 : 3

(c) 1 : 4 : 9   (d) 9 : 4 : 1

Sol. (c)

	A	:	B	:	C
Invest.	1	:	2	:	3
Time.	1	:	2	:	3
Profit	1	:	4	:	9

Partnership

Exercise

1. A started a business with ` 45,000 and B joined afterwards with 30,000. If the profit at the end of the one year was divided in the ratio 2 : 1 respectively, then B would have joined A for business after.
   (a) 1 month   (b) 2 months
   (c) 3 months   (d) 4 months

2. Four milkmen rented a pasture. M puts to graze 16 cows for 3 months and N puts 20 cows for 4 months, O puts 18 cows for 6 months and P puts 42 cows for 2 months. If M's share in rent be ` 2400, the rent paid by O is.
   (a) ` 3200        (b) ` 4200
   (c) ` 4000        (d) ` 5400

3. Two partners X and Y start a business by investing ` 50,000 and ` 40,000 respectively. What will be the ratio of their profits at the end of the year?
   (a) 5 : 4   (b) 3 : 6
   (c) 4 : 5   (d) 6 : 3

4. X starts a business with ` 25,000. After 4 months Y joins him with ` 20,000. What will be the ratio of their profit at the end of the year.
   (a) 4 : 8   (b) 5 : 10
   (c) 15 : 8   (d) 9 : 18

5. A starts a business with 21,000/- and later on B joins him with 36,000/- After how many months did B join if the profit is distributed in equal ratio?
   (a) 5   (b) 7
   (c) 6   (d) 9

6. Rakesh yadav and Bhuvnesh started a business by investing amount of ` 1,85,000 and ` 2,25,000 respectively. if Bhuvnesh's share in the profit earned by them is ` 9,000 then what is the total profit earned by them together?
   (a) ` 17,400      (b) ` 16,400

7. (c) ` 16,800      (d) ` 17,800

8. A and B started a boutique investing amounts of ` 35,000 and ` 56,000 respectively. If A's share in the profit earned by them is ` 45,000, then what is the total profit earned?
   (a) ` 81,000      (b) ` 1,27,000
   (c) ` 72,000      (d) ` 1,17,000

9. Rakesh Yadav and Bhuvnesh invested amounts of ` 40,000 and ` 75,000 respectively. At the end of five years they got a total dividend of ` 46,000. what is Rakesh Yadav's share in the dividend?
   (a) ` 16,500      (b) ` 15,500
   (c) ` 15,000      (d) ` 16,000

10. Rakesh Yadav invested an amount of ` 25,000 and started a business. Bhuvnesh joined him after one year with an amount of ` 30,000. After two years from starting the business, they earned the profit of ` 46,000. What will be Bhuvnesh's share in the profit?
    (a) ` 14,000     (b) ` 12,000
    (c) ` 17,250     (d) ` 20,000

11. Mr. Rakesh Yadav opened a workshop investing ` 40,000. He invested additional amount of ` 10,000 every year. After two years his Student Bhuvnesh joined him with an amount of ` 85,000. Thereafter Bhuvnesh did not invest any additional amount. On completion of four year from the opening of workshop they earned an amount of `1,95,000. What will be Rakesh Yadav's share in the earning.
    (a) 85,000   (b) 1,10,000
    (c) 1,35,000   (d) 95,000

11. X and Y enter into a partnership with capitals in the ratio 5 : 6 and at the end of 8 months, X withdraws. If they receive the profit in the ratio 5 : 9, Find how long Y's capital was used.
    (a) 8 months   (b) 9 months
    (c) 11 months   (d) 12 months

12. Two partners invest ` 125,000 and ` 85000 respectively in a business and agree that 60% of the profit should be divided equally between them and the remaining profit is to be divided into ratio of their capitals. If one partner gets ` 300 more than the other, Find the total profit made in the business.
    (a) ` 3739.50    (b) ` 3937.50
    (c) ` 3749.50    (d) ` 3947.50

13. Two brothers invested ` 50,000 and ` 70,000 respectively in a business and agreed that 70% of the profit should be divided equally between them and the remaining profit in the ratio of investment. If one Brother gets ` 90 more than the other, Find the total profit made in the business.
    (a) ` 1200       (b) ` 1400
    (c) ` 1600       (d) ` 1800

14. A, B and C enter into a partnership with capitals in the ratio 5 : 6 : 8, At the end of the business term, they received the profit in the ratio 5 : 3 : 12. Find the ratio of time for which they contributed their capitals?
    (a) 2 : 1 : 3   (b) 1 : 2 : 3
    (c) 2 : 3 : 1   (d) 3 : 2 : 1

15. X and Y entered into a partnership, investing ` 16,000 and ` 12,000 respectively. After 3 months X withdrew ` 5000, while Y invested 5000 more. After 3 months more Z joins the business with a capital of ` 21,000. After a year they obtained a profit of ` 26,400. By what amount does the share of Y exceeds the share of Z.

(a) `3600    (b) `3800

(c) `4600    (d) `4800

16. X, Y and Z are partner in a business. If X's capital is twice of Y's capital and Y's capital is three times to that of Z's capital then find the ratio of their investments.

(a) 6 : 3 : 1   (b) 3 : 8 : 1

(c) 4 : 9 : 3   (d) 3 : 1 : 5

17. X and Z invest capital in the ratio 2 : 1 while X and Y invest capital in the ratio 3 : 2. If their annual profit is ` 1,57,300 then what is Y's share?

(a) ` 48,400    (b) ` 58,809

(c) ` 48,810    (d) ` 47,782

18. X, Y and Z enter into a partnership. X invests $\frac{1}{4}$ part of total capital for one-fourth of the time. Y contributes one fifth of the capital for half of the time. Z contributes the remaining capital for the whole time. How should they share a profit of ` 1140?

(a) ` 100, ` 160, ` 880

(b) ` 110, ` 140, ` 860

(c) ` 120, ` 150, ` 840

(d) ` 140, ` 170, ` 830

19. A, B and C are three partners in a business. A, whose money has been used for 4 months, claims $\frac{1}{8}$ of the profit, B whose money has been used for 6 months, claims $\frac{1}{3}$ of the profit. C has invested ` 1560 for 8 months. How much money did A and B contribute?

(a) ` 740, ` 1250

(b) ` 730, ` 1240

(c) ` 720, ` 1280

(d) ` 750, ` 1260

20. In a partnership X invests $\frac{1}{6}$ th of the capital for $\frac{1}{6}$ th of the time, Y invests $\frac{1}{3}$ rd of the capital for $\frac{1}{3}$ rd time and Z invests the remaining capital for the whole time. If at the end of the year the profit earned is ` 23,000 then what will be Y's share?

(a) ` 5500    (b) ` 5000

(c) ` 6000    (d) ` 4000

21. Rakesh and Bhuvnesh started a business investing amounts in the ratio of 2 : 3. If Rakesh Yadav has an additional amount of `10,000, their ratio of investment would have been 3 : 2, The amount invested by Rakesh Yadav was :

(a) `8,000    (b) `12,000

(c) `18,000    (d) `20,000

22. The ratio of investments of two partners *X* and *Y* is 11 : 12 and the ratio of their profit is 2 : 3. If X invested the money for 8 months, then the time for which *Y* invested the money is:

(a) 8 months   (b) 9 months

(c) 10 months (d) 11 months

23. Bhuvnesh, Rakesh and Pawan started a business with `47,000. Bhuvnesh puts in `5,000 more than Rakesh and rakesh `3,000 more than Pawan. The share of Bhuvnesh out of the profit of `14,100 will be:

(a) `3,600    (b) `4,500

(c) `6,000    (d) `6,300

24. Bhuvnesh and Ankur enter into a partnership. At the end of 9 months Ankur withdraws but Bhuvnesh's capitals is used for one month more . If they receive profit in the ratio 5 : 6, then the ratio of their capital is:

(a) 3 : 4   (b) 4 : 3

(c) 5 : 6   (d) 6 : 5

25. Manoj, Pradeep and Chetan hired a car for `4,160. Manoj used it for 7 hours. Pradeep for 8 hours and Chetan used it for 11 hours. The rent shared by Manoj will be :

(a) `960    (b) `1120

(c) `1,260    (d) `1,760

26. Pradeep, Rakeshand Bhuvnesh are three partners in a business. The profit share of Pradeep is $\frac{3}{16}$ of the profit and Rakesh's share is $\frac{1}{4}$ of the profit. If Bhuvnesh receives `243, then the amount received by Rakesh will be :

(a) `90    (b) `96

(c) `108    (d) `120

27. Ankur is a working partner and Chetan is a sleeping partner in business Ankur puts in `5,000 and Chetan puts in `6,000. Ankur received 15% of the profit for managing the business and the rest is divided in proportion to their capitals. The amount received by Ankur out of the profit of `880 in all is :

(a) `132    (b) `340

(c) `472    (d) `492

28. Bhuvnesh starts business with a capital of `14,000, five months later Rakesh joins and further two months later Seemant joins them. If the profit sharing ratio in the end of year is 4 : 3 : 2, then the money invested by Seemant was:

(a) `18,000    (b) `16,800

(c) `18,600    (d) `10,800

29. Rakesh , Manoj and Ankur become partners in a business. Rakesh contributes $\frac{1}{3}rd$ of the capital for $\frac{1}{4}th$ of the time. Manoj contributes $\frac{1}{5}th$ of the capital for $\frac{1}{6}th$ of the time and Ankur, contributes the rest of the capital for the whole time. If the profit is `1,820, then the

Partnership

Rakesh's share in profit is :
(a) `130       (b) `260
(c) `292       (d) `304

30. In a business A and B gained some amount in a certain ratio. B and C received the profit in the ratio as that of A and B. If A received `6,400 and C received ` 10,000. Find the share of B
(a) `2,000      (b) `4,000
(c) `8,000      (d) `10,000

31. The capital of A and B are `20,000 and `4,000 respectively. A is entitled to be paid a salary of `1,200 per annum being a working partner. If the gross profit for one year is `1,800, their shares in the profit are respectively :
(a) `500,`100
(b) `1200,`600
(c) `1,700, `1,300
(d) `1,700, `100

32. A and B are partners who share profit in the ratio of 3 : 2, They agree to take C into partnership of $\frac{1}{4}$ th share of profit. The new profit sharing ratio will be:
(a) 9 : 6 : 5   (b) 5 : 6 : 9
(c) 6 : 5 : 9   (d) 9 : 5 : 6

33. A and B share profits and losses in a firm in the ratio of 3 : 2. C entered in this firm as a new partner and his profit sharing ratio is $\frac{1}{4}$ of total profit. If C has taken his share of profit from A and B in equal ratio, then the new profit sharing ratio will be :
(a) 19 : 11 : 1   (b) 19 : 11 : 10
(c) 10 : 11 : 9   (d) 10 : 11 : 19

34. A, B and C share the profit in the ratio of 2 : 3 : 7. If the average gain is `8,000, then B's share is:
(a) `2,000      (b) `1,000
(c) `1,500      (d) `6000

35. A, B and C share profit in the ratio of $\frac{1}{4}:\frac{1}{6}:\frac{7}{12}$. If C retires, they divided the share of the profit of C in the ratio of 4 : 5 respectively. The new profit sharing ratio of A and B will be :
(a) 55 : 53   (b) 53 : 55
(c) 5 : 3   (d) 3 : 5

36. A, B and C enter into a partnership. A puts in `1200 for 6 months, B `800 for 7 months and C `600 for 8 months . The share of A out of a profit of `396 is:
(a) `162        (b) `62
(c) `108        (d) `18

37. A and B enter into a partnership investing `48,000 and `60,000 respectively. After 3 months, A withdraws `8,000 while B invests `6,000 after 6 months of starting the business. Out of the total amount of profit, if A gets `12,000 as his share at the end of the year. Total profit is:
(a) `24,000     (b) `30,000
(c) `36,000     (d) `37,000

38. M,P and Q together started a business. M invested `6,500 for 6 months, P invested `8,400 for 5 months and Q invested `10,000  for 3 months. M is working member for which he gets 5% of total profit extra. If the total gain is `7,400, then Q's share is :
(a) `1900
(b) `2,100
(c) `3,200
(d) Data are incomplete

39. A ,B and C jointly start a business A puts in `15,000 for 8 months, B puts in `12,000 for 9 months and C puts in `8,000, for the whole year. At the end of the year there is a profit of `10,800. The difference between A's share and C's share in the profit will be :

(a) `800        (b) `600
(c) `1200       (d) `1,800

40. A started a business by investing `50,000. After 6 months B joined her by investing `75,000. After 6 months C joined with `1,25,000 . What is the ratio of profit shared after 2 years among A, B and C ?
(a) 4 : 5 : 6   (b) 8 : 9 : 10
(c) 8 : 9 : 12   (d) 4 : 5 : 8

41. A starts a business with `45,000. After 6 months B enters in this business with `80,000. After one year C invests `1,20,000. In what ratio the profit will be divided among A, B and C after two years?
(a) 9 : 16 : 24   (b) 3 : 4 : 4
(c) 3 : 4 : 8   (d) 3 : 3 : 8

42. Three partners A, B and C started a business by investing. 48000 each. After 6 months, A left the business, after 10 months B left the business and after 12 months C left the business. If total earned profit is . 5250, then find the share of A, B and C?
(a) `1125,`1825,`2250
(b) ` 1125,`1800,`2200
(c) `1125,`1875,`2250
(d) `1175,`1256,`2350

43. Three partners started a business by investing Rs. 60,000, Rs. 80,000 and Rs. 1,20,000 respectively. First partner left the business after 4 months, second after 9 months and third remained in the business for the whole year. At the end of year the total profit earned is 1,60,480 , then find their shares of profit.
(a) ` 16840, `44188, ` 92686
(b) ` 16048,`48144,` 96288
(c) ` 16042, `14842, ` 9862
(d) ` 15000, `13423, ` 7562

44. A,B and C have invested a sum of 125000 in a business. B invested . 15000 more than A

and C invested 20,000 more than B. If the total earned profit is 37450 at the end of year, then find their share of profit.

(a) ` 7490, ` 11984, ` 17976

(b) ` 8480, ` 7550, ` 8560

(c) ` 7940, ` 7054, ` 17500

(d) ` 5100, ` 6943, ` 7140

45. Bhuvnesh started a business by investing 42000. After few months Rakesh Yadav joined by investing 49,000. If at the end of year Bhuvnesh got 9000 and Rakesh Yadav got 7000 as a share of their profit. Then after how many months Rakesh Yadav joined the business.

(a) 1 month   (b) 4 months

(c) 2 months   (d) 3 months

46. A, B and C invested money in the ratio of $\frac{1}{2} : \frac{1}{3} : \frac{1}{5}$ in a business. After 4 months A doubled his investment and after 6 months B,half his investement. If the total profit at the end of year be 34650 then find the share of each in profit.

(a) ` 20,000, `25,000, `18,000

(b) ` 15,500, `27,200, `20,450

(c) ` 22,500, `6750, `5400

(d) ` 10350, 21,540, `12,050

47. A and B started a business by investing 36000 and 45000 respectively. After 4 months B withdraws $\frac{4}{9}$ of his investment. its 5 months after she again invested $\frac{11}{9}$ of its original investment. If the total earned profit at the end of the year, is 117240, then who will get more money as a share of profit and how much?

(a) A , `15,500 (b) B, `12,450

(c) A, `14,245 (d) B, `13,560

48. A, B and C started a business by investing 24,000, 32000 and 18000 respectively. A and B are active partner and get 15% and 12% of total profit and remaining profit is to be distributed among them in the ratio of their investments. If C got total 65700 as a profit,what was the total amount of profit ?

(a) ` 4,70,000  (b) ` 3,70,000

(c) ` 3,45,000  (d) ` 1,57,000

49. katrina, Rakesh Yadav and Bhuvnesh hired a pasture. Katrina grazed 12 cows for 2 hours every day for 4 months, Rakesh Yadav grazed 16 cows for 4 hours every day for 6 months and Bhuvnesh grazed 6 cows for 9 hours everyday for 2 months. If Rakesh Yadav has paid 1152 as a share of fare. Find the amount of total Rent.

(a) `1413       (b) `1214

(c) `1764       (d) `1102

50. A started a business with a capital of 500. After 2 months B joined A with 400. 6 months after the business started C joined with 800. If the total profit earned at the end of the year is 444. Find the share of their profit.

(a) ` 180, ` 120, ` 144

(b) ` 150, ` 130, ` 123

(c) ` 160, ` 141, ` 125

(d) ` 141, ` 110, ` 140

1. (c) Capital of A (i) ₹ 45,000

Capital of B (ii) ₹ 30,000

Ratio of $P_1 : P_2 = 2 : 1$

Now by using formula,

$$\frac{C_1 T_1}{C_2 T_2} = \frac{P_1}{P_2}$$

$$\frac{45000 \times 12}{30000 \times T_2} = \frac{2}{1}$$

$T_2 = 9$

Then B would join business after $(12 - 9) =$ **3 months**

2. (d)

	M	N	O	P
No. of cows→	16	20	18	42
Time →	3	4	6	2
Ratio of Rent→	48 :	80 :	108 :	84
	12 :	20 :	27 :	21

According to the question,

12 units = ₹ 2400

1 unit = ₹ $\frac{2400}{12}$ = 200

27 units = ₹ 27×200 = ₹ **5400**

3. (a)

	X	:	Y
Capital→	50,000	:	40,000
Time→	1	:	1
Profit→	50.000	:	40,000
	5	:	4

Note : Always remember when time is same the profit will be divided in the ratio of their capitals.

4. (c)

	X	:	Y
capital→	25,000	:	20,000
	5	:	4
Time →	12	:	8
Profit→	60	:	32
	15	:	8

Hence, Required ratio = **15 : 8**

5. (a) Capital of A = ₹ 21,000

Capital of B = ₹ 36,000

By using formula,

$$\frac{C_1 \times T_1}{C_2 \times T_2} = \frac{P_1}{P_2}$$

$$\frac{21000 \times 12}{36000 \times T_2} = \frac{1}{1}$$

$T_2 = 7$ months

∴ So B joined business after

$(12 - 7) = 5$ months.

6. (b)

	Rakesh Yadav	Bhuvnesh
Capital →	1,85,000 :	2,25,000
Profit →	37 :	45
	↓ × 200	↓ × 200
	7400	9000

\ Total profit = (7400 + 9000)

= ₹ **16400**

7. (d)

	A	B
Capital→	35,000 :	56,000
Profit→	5 :	8
	↓ × 9000	↓ × 9000
	45000	72,000

Total profit = (45000 + 72,000)

= ₹ **1, 17, 000**

8. (d)

	Rakesh Yadav :	Bhuvnesh
	40,000 :	75,000
	8 :	15
Time →	5 :	5
Profit→	8 :	15

Note: If time is same then ratio of their profit will be divided in the ratio of their capital.

Q (8 + 15) units = ₹ 46,000

23 units = ₹ 46,000

1 unit = ₹ 2,000

\ Share of Rakesh Yadav is

8 units = 8 × 2,000 = ₹ **16,000**

9. (c)

	Rakesh Yadav :	Bhuvnesh
Capital→	25,000 :	30,000
	5 :	6
Time →	2 :	1
Profit→	10 :	6
	5 :	3

According to the question,

(5 +3) units = ₹ 46,000

8 units = ₹ 46,000

1 unit = ₹ $\frac{46,000}{8}$

3 units = ₹ $\frac{46,000}{8} \times 3$

= ₹ **17,250**

Hence share of Bhuvnesh

= ₹ **17,250**

10. (b) Total investment of Rakesh Yadav in 4 years = 40,000 + 50, 000 + 60, 000 + 70,000

= ₹ 2,20,000

Total investment of Bhuvnesh in 2 years = 85,000 × 2 = 170,000

	Rakesh Yadav :	Bhuvnesh
Capital→	22,0000 :	170,000
Profit→	22 :	17

According to the question,

(22 + 17) units = ₹ 1,95,000

39 units = ₹ 1,95,000

1 unit = ₹ $\frac{1,95,000}{39}$

22 units = ₹ $\frac{1,95,000}{39} \times 22$

= ₹ **1,10,000**

11. (d) Let the capitals of Y was used for T months

According to the question.

$$\frac{5 \times 8}{6 \times T} = \frac{5}{9}$$

Column 1:

$\Rightarrow$ T = **12 months**

Hence capital of Y was used for = 12 months.

12. (b)

	1st partner		2nd partner
Capital $\rightarrow$	125,000	:	85,000

25 : 17

8

According to the question,

Note : 60 % of profit should be divided equally between. Them

8 units = ` 300

1 unit = ` $\dfrac{300}{8}$

42 units = ` $\dfrac{300}{8} \times 42$

$\therefore$ 40% of profit = ` $\dfrac{300}{8} \times 42$

Total profit = ` $\dfrac{300 \times 100}{8 \times 40} \times 42$

= ` **3937.50**

13. (d)

	1st Brother	:	2nd Brother
Capital $\rightarrow$	50,000	:	70,000

5 : 7

+2

2 units = ` 90

1 unit = ` $\dfrac{90}{2}$ = ` 45

12 units = 45 × 12 = ` 540

According to the question,

Note : 70% of the profit should be divided equally.

It means 30% of profit = ` 540

1 % of profit = ` $\dfrac{540}{30}$

100% of profit

= ` $\dfrac{540}{30} \times 100$ = ` **1800**

14. (a) We know

Profit = Time × capital invested

Required ratio of time

= $\dfrac{5}{5} : \dfrac{3}{6} : \dfrac{12}{8}$

Column 2:

= 1 : $\dfrac{1}{2}$: $\dfrac{3}{2}$

= 2 : 1 : 3

15. (a) Total capital invested by X in a year = 16,000 × 3 + 11000 × 9

= ` 147,000

Total capital invested by Y in a year = 12000 × 3 + 17000 × 9

= `189,000

Money invested by Z = 21,000 × 6 = ` 126,000

	X	:	Y	:	Z
Capital $\rightarrow$	147	:	189	:	126

7 : 9 : 6

According to the question,

(7 + 9 + 6) units = ` 26,400

1 unit = ` $\dfrac{26,400}{22}$ = ` 1,200

Required difference = (9 – 6) × 1200 = ` **3600**

16. (a) According to the question,

	X	:	Y	:	Z
Capital $\rightarrow$	6	:	3	:	1

×2 ×3

$\therefore$ Required ratio of capital = **6 : 3 : 1**

17. (a)

X	:	Z		X	:	Y
$2_{×3}$	:	$1_{×3}$		$3_{×2}$	:	$2_{×2}$

Note : X will be same in both cases, hence new required ratio

X	:	Y	:	Z
6	:	4	:	3

According to the question,

(6 + 4 + 3) units = ` 1,57, 300

13 units = ` 1,57,300

1 unit = ` 1,21,00

4 units = ` 1,2100 × 4 = ` **4,8400**

$\therefore$ Share of Y = ` **4,8400**

18. (a) Let the total time = 8 year

Let the total capital = 20 units

Column 3:

X	:	Y	:	Z
Capital $\rightarrow$ 5	:	4	:	11
Time $\rightarrow$ 2	:	4	:	8
Profit $\rightarrow$ 10	:	16	:	88

5 : 8 : 44

According to the question,

(5 + 8 + 44) units = ` 1140

57 units = ` 1140

1 unit = ` $\dfrac{1140}{57}$ = ` **20**

Profit of X = 20 × 5 = ` 100

Profit of Y = 20 × 8 = ` 160

Profit of Z = 20 × 44 = ` 880

19. (c) Let total profit = 24 units

Profit of A = $\dfrac{1}{8} \times 24$ = 3 units

Profit of B = $\dfrac{1}{3} \times 24$ = 8 units

	A	:	B	:	C
Capital $\rightarrow$	x	:	y	:	1560
Time $\rightarrow$	4	:	6	:	8
Profit $\rightarrow$	3	:	8	:	13 [24 –(8 + 3)]

We know,

Capital × Time = profit

$\dfrac{\text{Profit}}{\text{Time}}$ = Capital

$\therefore$ $\dfrac{13}{8}$ units = 1560

1 unit = ` 960

y = $\dfrac{960 \times 8}{6}$

y = ` 1280

x = $\dfrac{3}{4} \times 960$ = ` 720

Capital of A = ` 720

Capital of B = ` 1280

20. (d) Let the Capital = 18 units

Let the time = 6 years

	X	:	Y	:	Z
Capital $\rightarrow$	3	:	6	:	9
Time $\rightarrow$	1	:	2	:	6
Profit $\rightarrow$	3	:	12	:	54

1 : 4 : 18

According to the question,

(1 + 4 + 18) units = ₹ 23000

23 units = ₹ 23000

1 unit = ₹ 1000

4 units = ₹ 1000 × 4 = ₹ 4000

Share of Y is ₹ 4,000

21. (a) Initial Ratio of investments by Rakesh and Bhuvnesh = 2 : 3

Let their respective investments be $2x$ and $3x$

According to the question.

If Rakesh added ₹ 10,000 to his investment

Then New Ratio = 3 : 2

$$\frac{2x + 10,000}{3x} = \frac{3}{2}$$

$4x + 20,000 = 9x$

$5x = 20000$

$x = ₹ 4000$

Þ original investment by Rakesh = 2 × 4000 = ₹ 8000

Alternative

Rakesh Yadav : Bhuvnesh

2×2 : 3 ×2

3×3 : 2 ×3

_____

Note : we know Rakesh Yadav has an additional amount. So amount of Bhuvnesh would be same

After that new Ratio

Rakesh
Yadav Bhuvnesh

4 : 6

+ 5

9 : 6

According to the question

5 units = ₹ 10,000

1 unit = ₹ 2,000

Initial capital of Rakesh Yadav = 2000 × 4 = ₹ 8000

22. (d) Let X's capital be ₹ $11x$ and Y's capital be ₹ $12x$

and let time for which Y invested capital is T_2 months

by using formula,

$$\frac{C_1 \times T_1}{C_2 \times T_2} = \frac{P_1}{P_2}$$

$$\frac{11x \times 8}{12x \times T_2} = \frac{2}{3}$$

T_2 = 11 months

Hence, the time for which Y invested his capital is 11 months

23. (c) Total investments by Bhuvnesh, Rakesh and Pawan = ₹ 47,000

Let amount invested by Pawan = ₹ x

then amount invested by Rakesh = ₹ $(x + 3000)$[given]

and amount invested by Bhuvnesh = ₹ $(x + 3000 + 5000)$ [given]

According to the question

$x + (x + 3000) + (x + 3000 + 5000)$ = 47000

$3x + 11000 = 47000$

$3x = 36000$

$x = ₹ 12000$

	Bhuvnesh	Rakesh	pawan
Ratio of Amounts	(x + 8000) (12000+ 8000)	(x + 3000) (12000+3000)	x 12000
	20,000	(12000+ 3000)	12000
	20	15	12

Since the time for which the amounts were invested was same for all the partners the ratio of amounts will be the ratio of profits

Share of Bhuvnesh out of total profit

$$= \frac{14100}{(20 + 15 + 12)} \times 20 = ₹ 6000$$

24. (a) Let Bhuvnesh's Capital = ₹ x

Let Ankur's Capital = ₹ y

Now Acc. to question

	Bhuvnesh	Ankur
Capital	x	y
time (in month)	10(9 +1)	9
Ratio of profit we know	5	6

$$\frac{10 \times x}{9 \times y} = \frac{5}{6} \Rightarrow \frac{x}{y} = \frac{3}{4}$$

Hence the required ratio of capital of Bhuvnesh and Ankur is = 3 : 4

25. (b) Total cost of renting a car

= ₹4,160

According to the question,

	Manoj	Pradeep	chetan
Time of using car in hours	7	8	11

Here the ratio of time will be the ratio of rent each person has to pay.

Þ ratio of rents 7 : 8 : 11 to be paid

Rent shared by manoj

$$= \frac{4160 \times 7}{(7 + 8 + 11)} = ₹ 1120$$

26. (c) Let total profit = 16 units

According to question

profit share of pradeep = $\frac{3}{16} \times 16$ units = 3 units

Profit share of Rakesh = $\frac{1}{4} \times 16$ = 4 units

then profit share of Bhuvnesh = [16 – (4 + 3)] = 9 units

But profit of Bhuvnesh = ₹ 243 [given]

9 units = ₹ 243

1 unit = ₹ 27

profit share of Rakesh = 4 units = 27 × 4 = ₹ 108

27. (c) Total profit = ₹ 880

Since A gets 15% of total profit for management

\ Remaining profit

$$= 880 - \frac{880 \times 15}{100} = ₹ 748$$

	Ankur	Chetan
Amounts	5,000	6,000
Ratio of Capital	5	6

The remaining profit is being divided in the ratio of capital.

Ankur's share of proift

$$= \frac{748}{(5 + 6)} \times 5 = ₹ 340$$

Total profit Received by ankur = 340 + 132 = ₹ 472

28. (b)

Column 1:

Amounts invested	Bhuvnesh	Rakesh	Seemant
	14,000		
time (in months)	12	7	5

1,68,000

Ratio of profits   4 : 3 : 2

Let their profits are $4x : 3x : 2x$

$4x = 1,68,000$

$x = \dfrac{168000}{4} = 42,000$

þ profit share of seemant
   = (2×42,000) = ` 84000

þ Capital invested by seemant

   = $\dfrac{84000}{5}$ = ` 16,800

29. (b) Let total capital of Rakesh, Manoj and Ankur = 15 units
   Let total time for investment = 12 units
   Now, According to question .

   Rakesh   Manoj   Ankur

   Capitals $\frac{1}{3}$×15units $\frac{1}{5}$×15units

   Time Ratio of time ($\frac{1}{4}$×12 units × $\frac{1}{6}$×12 units × 12 units)

   5   3   7

   3   2   12

   Ratio of profits $\frac{15}{5}$: $\frac{6}{2}$: $\frac{84}{28}$

   Total profit = 5 +2 +28 = 35 units
   also, total profit = ` 1820 (Given)
   35 units = ` 1820

   1 unit = $\dfrac{1820}{35}$ = ` 52

   Hence Rakesh's share in profit
   = 5 units = 52× 5 = ` 260

30. (c) Let ratio of profit of A and B is a : b.

\ Ratio of profit of B and C = a : b

   A : B   B : C
   $a_{×a}$: $b_{×a}$ $a_{×b}$: $b_{×b}$

   Note: Value of B would be same in both cases.

   A : B : C
   a^2 : ab : b^2

   According to the question,

   $a^2 = 6400$

   $a = 80$

Column 2:

Simlarly b^2 = 10,000

þ b = 100

Amount recived by B = ab
= 80 × 100 = ` 8,000

31. (d)   A : B
Capital ® 20,000 : 4,000
           5 : 1
A's salary = ` 12,00
Remaining profit = (1800 – 1200) = ` 600
6 units = ` 600
1 units = ` 100
share of A = 100× 5 = ` 500
share of B = 100× 5 = ` 100
\ Total share of A = (1200 +500)
   = ` 1700
Total share of B = ` 100

32. (a) Let the total share = 100 units

   share of C = $\dfrac{100}{4}$ = 25 units

   Remaining share
   = (100 – 25) = 75 units

\ Share of A = $\dfrac{75}{(3+2)}$ × 3 = 45 units

   share of B = $\dfrac{75}{(3+2)}$ × 2 = 30 units

        A : B   C
New profit
Sharing Ratio = 45 : 30 : 25
Required Ratio = 9 : 6 : 5

33. (b) Let the total share = 200 units

\ share of C = 200× $\dfrac{1}{4}$ = 50 units

   Remaining share = (200 – 50)
                   = 150 units

\ share of A = $\dfrac{200}{(3+2)}$ × 3 = 120 units

   share of B = $\dfrac{200}{(3+2)}$ × 2 = 80 units

   According to the question,
   C receives equal amounts from A and B.

\ A's remaining share = (120 – 25)

Column 3:

= 95

B's remaining share=(80 – 25)= 55

           A : B : C
New Ratio ® 95 : 55 : 50
           19 : 11 : 10

34.(d)   A : B : C
Ratio of profit ® 2 : 3 : 7

Average gain = $\dfrac{(2+3+7)}{3}$
             = 4 units

According to the question,
   4 units = ` 8000
   1 unit = ` 2000
   3 units = 3 × 2000 = ` 6000

\ share of B = ` 6000

35. (a)   A : B : C

   profit ® $\dfrac{1}{4}$: $\dfrac{1}{6}$: $\dfrac{7}{12}$

           $3_{×9}$: $2_{×9}$: $7_{×9}$

   Note: To avoid fraction in calculation multiply all the ratios by 9. After that new Ratio of profits

           A : B : C
   profit ® 27 : 18 : 63

   New profit of A

   = 27 + $\dfrac{63}{(5+4)}$ × 4 = 55

   New profit of B

   = 18 + $\dfrac{63}{(4+5)}$ × 5 = 53

\ New profit sharing ratio of A and B = **55 : 53**

36. (a)

           A : B : C
   Capital → 1200 : 800 : 600

   ×   ×   ×

   Time → 6   7   8

   7200 : 5600 : 4800
   9 : 7 : 6

   According to the question,
   (9 +7 + 6) units = ` 396
   22 units = ` 396

   1 unit = $\dfrac{396}{22}$ = ` 18

\ Share of A = 18 × 9 = ` 162

37. (b) Total capital of A invested in 1 year = 48,000× 3 + 40,000 × 9 = 1,44,000 + 3,60,000 = ` 5,04,000

Total capital of B invested in 1 year = 60,000 × 6 + 66,000 × 6 = ` 756000

$$\begin{array}{ccc} & A & : & B \\ \text{Capital} \to & 504000 & : & 756000 \\ \text{Profit} \to & 2 & : & 3 \end{array}$$

↓ × 6000   ↓ × 6000

12,000   18,000

Total profit = (2 + 3) × 6000 = ` 30,000

38. (a)

$$\begin{array}{ccc} & M & P & Q \\ \text{Capital} \to & 6500 & 8400 & 10,000 \\ × & × & × \\ \text{Time} \to & 6 & 5 & 3 \\ \hline & 390 & : 420 & : 300 \\ \text{Profit} \to & 13 & : 14 & : 10 \end{array}$$

M's extra share on working partner = $7400 × \dfrac{5}{100} = $ ` 370

Remaining Profit = ` 7400 – ` 370 = ` 7030

According to the question ,

(13 + 14 +10) units = ` 7030

37 units = ` 7030

1 unit = ` $\dfrac{7030}{37}$

10 units = ` $\dfrac{7030}{37} × 10 = $ ` 1900

39. (a)

$$\begin{array}{ccc} & A & : & B & : & C \\ \text{Capital} \to & 15000 & : & 12000 & : & 8000 \\ \text{Time} \to & 8 & & 9 & & 12 \\ \hline & 120 & : & 108 & : & 96 \\ \text{Profit} \to & 10 & : & 9 & : & 8 \end{array}$$

According to the question ,

(10 +9 +8) units = ` 10,800

27 units = ` 10,800

1 unit = ` 400

Difference between A's share and C's

Share = (10 – 8) × 400 = ` 800

40. (b)

$$\begin{array}{ccc} & A & : & B & : & C \\ \text{Capital} \to & 50000 & : & 75000 & : & 125000 \\ \text{(year)Time} \to & 2 & & \dfrac{3}{2} & & 1 \\ \hline & 100 & : & \dfrac{75×3}{2} & : & 125 \\ \text{Profit} \to & 8 & : & 9 & : & 10 \end{array}$$

\ Required ratio of profit = **8 : 9 : 10**

41. (b)

$$\begin{array}{ccc} & A & : & B & : & C \\ \text{Capital} \to & 45000 & : & 80000 & : & 120000 \\ \text{(year)Time} \to & 2 & & \dfrac{3}{2} & & 1 \\ \hline & 90 & : & 120 & : & 120 \\ \text{Profit} \to & 3 & : & 4 & : & 4 \end{array}$$

Required Ratio of profit = 3 : 4 : 4

42. (c)

$$\begin{array}{ccc} & A & : & B & : & C \\ \text{Capital} \to & 48000 & : & 48000 & : & 48000 \\ \text{Time} \to & 6 & : & 10 & : & 12 \\ \hline \text{Profit} \to & 6 & : & 10 & : & 12 \\ & 3 & : & 5 & : & 6 \end{array}$$

Note: The capital of all the partners are equal so the profit would be divided in the ratio of their time.

According to the time,

(3 + 5 + 6)units = ` 5250

14 units = ` 5250

1 unit = ` 375

∴ Share of A = 375 × 3 = ` 1125

Share of B = 375 × 5 = ` 1875

Share of C = 375 × 6 = ` 2250

43.(b)

$$\begin{array}{ccc} & A & : & B & : & C \\ \text{Capital} \to & 60000 & : & 80000 & : & 120,000 \\ \text{Time} \to & 4 & : & 9 & : & 12 \\ \hline \text{Profit} \to & 240,000 & : & 720,000 & : & 1440,000 \\ & 1 & : & 3 & : & 6 \end{array}$$

According to the question,

(1 + 3 + 6) units = ` 1,60,480

10 units = ` 1,60,480

1 unit = ` 16,048

Share of A = 16,048 × 1 = `

16,048

Share of B = 16,048 × 3 = ` 48,144

Share of C = 16,048 × 6 = ` 96,288

44 (a) Let the amount invested by A = ` x

Now according to the question,

$$\begin{array}{ccc} & A : & B & : C \end{array}$$

Capital → x :(x + 15000): (x + 35000)

∴ x + x + 15000 + x + 35000 = ` 125000

3x = 125000 – 50000

3x = 75000

x = ` 25000

∴ Amount invested by B = ` 40,000

Amount invested by C = ` 60,000

$$\begin{array}{ccc} & A & : & B & : & C \\ \text{Capital} \to & 25000 & : & 40,000 & : & 60,000 \\ \text{Profit} \to & 5 & : & 8 & : & 12 \end{array}$$

(5 + 8 + 12) units = ` 37450

25 units = ` 37450

1 unit = ` 1498

∴ Share of A = 1498 × 5 = ` 7490

Share of B = 1498 × 8 = ` 11984

Share of C = 1498 × 12 = ` 17976

45. (b) Capital invested by Bhuvnesh = ` 42,000

Capital invested by Rakesh yadav = ` 49,000

Ratio of profits of Rakesh yadav and Bhuvnesh = 9000 : 7000 = 9 : 7

We know, $\boxed{\dfrac{C_1 × T_1}{C_2 × T_2} = \dfrac{P_1}{P_2}}$

$\dfrac{42,000 × 12}{49,000 × T_2} = \dfrac{9}{7}$

T_2 = 8 months

It means Rakesh yadav invested his capital for 8 months. It means he joined business after (12 – 8 =4) months.

46. (c) Ratio of Capital invested by A, B and C = 15 : 10 : 6

Total Capital invested by A in 1 year = 15x × 4 + 30x × 8 = 300x

Total capital invested by B in 1 year = 10x × 6 + 5x × 6 = 90x

Total capital invested by C in 1 year = 6x × 12 = 72x

Ratio of profits :

 A : B : C

 $300x$: $90x$: $72x$

 $50x$: $15x$: $12x$

According to the question,

$(50x + 15x + 12x) = ₹\ 34650$

$77x = ₹\ 34650$

$x = ₹\ \dfrac{34650}{77} = ₹\ 450$

Profit of A = ₹ 450 × 50

    = ₹ 22500

Profit of B = ₹ 450 × 15 = ₹ 6750

Profit of C = ₹ 450 × 12 = ₹ 5400

47. (d) Total capital invested by A in 1 year = 36000 × 12 = ₹ 432000

Total capital invested by B in 1 year = 45000 × 4 + (45000 – 20000) × 5 + (55000 + 25000) × 3

= 180000 + 125000 + 240000

= 545000

    A : B

Ratio of capital 432000 : 545000

Ratio of profit 432 : 545

According to the question,

(432 + 545) units = 117240

977 units = ₹ 117240

1 unit = $\dfrac{117240}{977}$ = 120

Difference in profit = (545 – 432) × 120 = 13560

It means B will get 13560 more than A.

48. **(b)** A : B : C

Capital 24000 : 32000 : 18000

    12 : 16 : 9

Let the total profit = 100x

Extra share of A in Profit

= $100x × \dfrac{15}{100}$ = 15x

Extra share of B = $100x × \dfrac{12}{100}$ = 12x

Remaining profit

= [100x – (15x + 12x] = 73x

According to the question,

Note: Remaining profit is distributed in the ratio of their capitals

∴ Share of C

= $\dfrac{73x}{(12+16+9)} × 9 = \dfrac{657x}{37}$

$\dfrac{657x}{37}$ = 65700

x = $\dfrac{65700 × 37}{657}$ = 3700

∴ Hence Required profit = 100x

= 100 × 3700 = 3,70,000

49. (c)

Total rent (288 + 1152 + 324)

= Rs. 1764

50. (a)

According to the question,

(15 + 10 + 12) units = Rs. 444

37 units = Rs. 444

1 unit = $\dfrac{444}{37}$ = Rs. 12

Profit of A = 15 × 12 = Rs. 180

Profit of B = 10 × 12 = Rs. 120

Profit of C = 12 × 12 = Rs. 144