PARTNERSHIP

IMPORTANT FACTS AND FORMULAE :

1. Partnership: When two or more than two persons run a business jointly, they are called partners and the deal is known as *partnership*.

2. Ratio of Division of Gains:

i) When investments of all the partners are for the same *time*, the gain or loss is distributed a among the partners in the ratio of their investments.

Suppose A and B invest Rs. x and Rs. y respectively for a year in a business, then at the end of the year:

(A's share of profit) : (B's share of profit) = x : y.

ii) ***When investments are for different time periods,*** then equivalent capitals are calculated for a unit of time by taking (capital x number of units of time). Now, gain or loss is divided in the ratio of these capitals.

Suppose A invests Rs. x for p months and B invests Rs. y for q months, then

(A's share of profit) : (B's share of profit) = xp : *yq*.

3. Working and Sleeping Partners: A partner who manages the business is known .as a *working partner* and the one who simply invests the money is a *sleeping partner*.

SOLVED EXAMPLES

Ex. 1. A, B and C started a business by investing Rs. 1,20,000, Rs. 1,35,000 and ,Rs.1,50,000 respectively. Find the share of each, out of an annual profit of Rs. 56,700.

Sol. Ratio of shares of A, Band C = Ratio of their investments

= 120000 : 135000 : 150000 = 8 : 9 : 10.

A's share = Rs. (56700 x (8/27))=Rs. 16800.

B's share = Rs. (56700 x (9/27)) = Rs. 18900.

C's share = Rs. (56700 x (10/27))=Rs. 21000.

Ex. 2. Alfred started a business investing Rs. 45,000. After 3 months, Peter joined him with a capital of Rs. 60,000. After another 6 months, Ronald joined them with a capital of Rs. 90,000. At the end of the year, they made a profit of Rs. 16,500. Find the lire of each.

Sol. Clearly, Alfred invested his capital for 12 months, Peter for 9 months and Ronald for 3 months.

So, ratio of their capitals = (45000 x 12) : (60000 x 9) : (90000 x 3)
= 540000 : 540000 : 270000 = 2 : 2 : 1.

Alfred's share = Rs. (16500 x (2/5)) = Rs. 6600

Peter's share = Rs. (16500 x (2/5)) = Rs. 6600

Ronald's share = Rs. (16500 x (1/5)) = Rs. 3300.

Ex. 3. A, B and C start a business each investing Rs. 20,000. After 5 months A withdrew Rs.6000 B withdrew Rs. 4000 and C invests Rs. 6000 more. At the end of the year, a total profit of Rs. 69,900 was recorded. Find the share of each.

Sol. Ratio of the capitals of A, B and C
= 20000 x 5 + 15000 x 7 : 20000 x 5 + 16000 x 7 : 20000 x 5 + 26000 x 7
= 205000:212000 : 282000 = 205 : 212 : 282.

A's share = Rs. 69900 x (205/699) = Rs. 20500

B's share = Rs. 69900 x (212/699) = Rs. 21200;

C's share = Rs. 69900 x (282/699) = Rs. 28200.

Ex. 4. A, B and C enter into partnership. A invests 3 times as much as B and B invests two-third of what C invests. At the end of the year, the profit earned is Rs. 6600. What is the share of B ?

Sol. Let C's capital = Rs. x. Then, B's capital = Rs. (2/3)x

A's capital = Rs. (3 x (2/3).*x)* = Rs. *2x*.

Ratio of their capitals = *2x* : (2/3)x:x= 6 : 2 : 3.

Hence, B's share = Rs. (6600 x (2/11))= Rs. 1200.

Ex. 5. Four milkmen rented a pasture. A grazed 24 cows for 3 months; B 10 for 5 months; C 35 cows for 4 months and D 21 cows for 3 months. If A's share of rent is Rs. 720, find the total rent of the field.

Sol. Ratio of shares of A, B, C, D = (24 x 3) : (10 x 5) : (35 x 4) : (21 x 3) = 72 : 50 : 140 : 63.

Let total rent be Rs. x. Then, *A's* share = Rs. (72x)/325

(72x)/325=720 ⇔ x=(720 x 325)/72 = 3250

Hence, total rent of the field is Rs. 3250.

Ex.6. A invested Rs. 76,000 in a business. After few months, B joined him Rs. 57,000. At the end of the year, the total profit was divided between them in ratio 2 : 1. After bow many months did B join?

Sol. Suppose B joined after x months. Then, B's money was invested for (12 - x)

(76000 x 12)/(57000 x (12-x) =2/1 ⇔ 912000=114000(12-x)

114 (12 - x) = 912⇔12-x=8⇔x=4

Hence, B joined after 4 months.

Ex.7. A, Band C enter into a partnership by investing in the ratio of 3 : 2: 4. After 1 year, B invests another Rs. 2,70,000 and C, at the end of 2 years, also invests Rs.2,70,000. At the end of three years, profits are shared in the ratio of 3 : 4 : 5. Find initial investment of each.

Sol. Let the initial investments of A, Band C be Rs. *3x,* Rs. 2x and Rs. 4x respectively.

Then,

(3x x 36) :*[(2x* x 12) + *(2x* + 270000) x 24] : *[(4x* x 24) + *(4x* +270000) x 12]=3:4:5

1O8x:(72x + 6480000) : *(144x* + 3240000) = 3 : 4 : 5

108x /(72x+6480000)=3/4 ⇔*432x = 216x* + 19440000

⇔*216x* = 19440000

x=90000

Hence, A's initial investment = 3x = Rs. 2,70,000;

B's initial investment = 2x = Rs. 1,80,000;

C's initial investment = 4x = Rs. 3,60,000.