PARTNERSHIP
When 2/more persons run a joint business are called partners & the deal is known as partnership.

Ratio of Divisions of Gains
1. If investment from all partner at the same time, gain/loss is distributed among the partners in the ratio of their investments.
If X and Y invest Rs. x & Rs. y for a year in a business, at the end of the year:
(X's share of profit): (Y's share of profit) = x: y.

2. 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.

If X invests Rs. x for p months and Y invests Rs. y for q months then,
(X's share of profit): (Y's share of profit) = xp : yq.

Working partner
It is the person/partner who manages the business.

Sleeping partner
It is the person/partner who simply invests the money the business.

Problems with solutions

1. 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:

Solution
Let C = x.
Then, B = x + 5000 and A = x + 5000 + 4000 = x + 9000.
So, x + x + 5000 + x + 9000 = 50000
$\Rightarrow$ 3x = 36000
$\Rightarrow$ x = 12000

A : B : C = 21000 : 17000 : 12000 = 21 : 17 : 12.

$\therefore$ A's share = Rs. $\left(35000 \text{ x } \frac{21}{50}\right)$ = Rs. 14,700.

2. 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?

Solution
Let B's capital be Rs. x.
Then, $\left(\frac{3500 \text{ x } 12}{7x} = \frac{2}{3}\right)$

14x = 126000
x = 9000.

3. 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?

Solution

A : B : C = (10 x 7) : (12 x 5) : (15 x 3) = 70 : 60 : 45 = 14 : 12 : 9.

$\therefore$ C's rent = Rs. $\left(175 \text{ x } \frac{9}{35}\right)$ = Rs. 45.

4. A began a business with Rs. 85,000. He was joined afterwards 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?

Solution
Suppose B joined for x months. Then,
here $\left(\frac{85000 \text{ x } 12}{42500 \text{ x } x} = \frac{3}{1}\right)$
x = $\left(\frac{85000 \text{ x } 12}{42500 \text{ x } 3}\right)$ = 8.

So, B joined for 8 months.

5. 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?

Solution
Let the initial investments of A and B be 3x and 5x.
A : B : C = (3x x 12) : (5x x 12) : (5x x 6) = 36 : 60 : 30 = 6 : 10 : 5.