

## **CALCULATION OF NEW PROFIT-SHARING RATIO AND SACRIFICING RATIO:-**

**Q1** Girija ,Yatin ,Zubin are partners sharing profits and losses in the ratio of 5:3:2. They admit Suresh into partnership and give him  $\frac{1}{5}$ <sup>th</sup> share of profits. Find the new profit-sharing ratio.

**Solution** – Old Ratio – 5:3:2

Suresh is admitted for  $\frac{1}{5}$  share of profit

Let the combined share of profit for all partners after Suresh's admission be = 1

Combined share of Raj, Ram and Ramesh after Suresh's admission = 1 – Suresh share =  $1 - \frac{1}{5} = \frac{4}{5}$

**New Ratio = Old Ratio x Combined Share of Raj, Ram and Ramesh**

$$\text{Girija} = \frac{5}{10} \times \frac{4}{5} = \frac{20}{50}$$

$$\text{Yatin} = \frac{3}{10} \times \frac{4}{5} = \frac{12}{50}$$

$$\text{Zubin} = \frac{2}{10} \times \frac{4}{5} = \frac{8}{50}$$

**New profit sharing Ratio:-**

girija

yatin

zubin

Suresh

10:6:4:5

**Q2 .** A & B are partners sharing profits and losses in the proportion of 7:5. They agree to admit C. their manager, into partnership that is to get  $\frac{1}{6}$ <sup>th</sup> share in the profits. He takes this share as  $\frac{1}{24}$ <sup>th</sup> from A and  $\frac{1}{8}$ <sup>th</sup> from B. calculate new profit-sharing ratio.

**Solution** – Old Ratio - 7:5

C admits for  $\frac{1}{6}$  share of profit

A sacrifices his share of profit in favour of C -  $\frac{1}{24}$

B sacrifices his share of profit in favour of C -  $\frac{1}{8}$

**New Ratio = Old Ratio – Sacrificing Ratio**

$$\text{A's} = \frac{7}{12} - \frac{1}{24} = \frac{13}{24}$$

$$\text{B's} = \frac{5}{12} - \frac{1}{8} = \frac{7}{24}$$

**New Profit-sharing ratio**

13:7:4

**Q3 . A, B and C were partners in a firm sharing profits in the ratio of 3:2:1. They admitted D as a new partner for  $\frac{1}{8}$ <sup>th</sup> share in the profits, which he acquired  $\frac{1}{16}$ <sup>th</sup> from B and  $\frac{1}{16}$ <sup>th</sup> from C. Calculate the new profit-sharing ratio of A, B, C and D.**

**Solution –** A, B & C shares profits in the ratio of 3:2:1

D's share -  $\frac{1}{8}$  (D acquired  $\frac{1}{16}$  from B & C each)

A's Share -  $\frac{3}{6}$  (retains original share)

B's new share -  $\frac{2}{6} - \frac{1}{16} = \frac{13}{48}$

C's new share -  $\frac{1}{6} - \frac{1}{16} = \frac{5}{48}$

New ratio of = 24:13:5:6

**Q4. Bharati and Astha were partners sharing profits in the ratio of 3:2. They admitted Dinkar as a partner for  $\frac{1}{5}$ <sup>th</sup> share in the future profits of the firm which he got equally from Bharati and Astha. Calculate the new-sharing ratio of Bharati, Astha and Dinkar.**

**Solution – Calculation of New Profit Sharing Ratio:-**

Bharti: Astha - 3:2 (Old Ratio)

Dinkar -  $\frac{1}{5}$

Bharti's Sacrifice -  $\frac{1}{5} \times \frac{1}{2} = \frac{1}{10}$

Astha's Sacrifice -  $\frac{1}{5} \times \frac{1}{2} = \frac{1}{10}$

Bharti's New share -  $\frac{3}{5} - \frac{1}{10} = \frac{6-1}{10} = \frac{5}{10}$

Astha's new share -  $\frac{2}{5} - \frac{1}{10} = \frac{4-1}{10} = \frac{3}{10}$

Dinkar's new share -  $\frac{1}{5} \times \frac{2}{2} = \frac{2}{10}$

Bharti: Astha: Dinkar - 5:3:2 (New Ratio)

**Q5 Mohan and Mahesh are partners sharing profits and losses in the ratio of 3:2. Nusrat is admitted as partner with  $\frac{1}{4}$  shares in profit. Nusrat takes his share from Mohan and Mahesh in the ratio of 2:1. Calculate new profit-sharing ratio.**

**Solution –** Old Profit Sharing Ratio amongst Partners (Mohan & Mahesh) is 3:2

Nusrat is admitted for  $\frac{1}{4}$ <sup>th</sup> share in Profits

Sacrificing Ratio of Mohan and Mahesh is 2:1

Nusrat acquires -  $\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$  from Mohan

Nusrat acquires -  $\frac{1}{3} \times \frac{1}{4} = \frac{1}{12}$  from Mahesh

New ratio - old ratio – new ratio

Mohan's new share -  $\frac{3}{5} - \frac{2}{12} = \frac{36-10}{60} = \frac{26}{60}$

Mahesh's new share -  $\frac{2}{5} - \frac{1}{12} = \frac{24-5}{60} = \frac{19}{60}$

Nusrat's share -  $\frac{1}{4} = \frac{15}{60}$

New ratio - 26:19:15

**Q6. S, B and J were partners in a firm. T was admitted as a partner in the partnership firm for  $\frac{1}{5}$ <sup>th</sup> share of profit. Calculate the sacrificing ratio of S, B and J.**

**Solution – Old ratio: S: J: B - 1:1:1**

T is admitted for  $\frac{1}{5}$  share

Let the total Profit of firm be 1

Remaining share of the S J B after T's admission -  $1 - \frac{1}{5} = \frac{5-1}{5} = \frac{4}{5}$

New share

S -  $\frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$

J -  $\frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$

S -  $\frac{4}{5} \times \frac{1}{3} = \frac{4}{15}$

T -  $\frac{1}{5} \times \frac{3}{3} = \frac{3}{15}$

New profit sharing ratio of all partners S: J: B: T - 4:4:4:3

Sacrificing ratio – Old ratio – new ratio

S =  $\frac{1}{3} - \frac{4}{15} = \frac{5-4}{15} = \frac{1}{15}$

J =  $\frac{1}{3} - \frac{4}{15} = \frac{5-4}{15} = \frac{1}{15}$

B =  $\frac{1}{3} - \frac{4}{15} = \frac{5-4}{15} = \frac{1}{15}$

Sacrificing ratio of S: J: B - 1:1:1

**Q7. P and Q were partners in a firm sharing profits in the ratio of 5:3. R was admitted for  $\frac{1}{4}$ <sup>th</sup> share in the profit of which he took 75% from P and the remaining from Q. calculate the sacrificing ratio of P and Q.**

**Solution –** Old ratio of P and Q - 5:3

Share of R is  $\frac{1}{4}$ <sup>th</sup> in the profits

R will take 75% From P

P will take 75% -  $\frac{3}{4}$

Remaining share of Profit from Q -  $\frac{1}{4} - \frac{3}{4} = \frac{1}{4}$

Sacrificing ratio of P and Q - 3: 1

**Q8 Kabir and Farid are partners in a firm sharing profits and losses in the ratio of 7:3. Kabir surrenders  $\frac{2}{10}$ <sup>th</sup> from his share and Farid surrenders  $\frac{1}{10}$ <sup>th</sup> from his share in favour of Jyoti; the new partner. Calculate new profit-sharing ratio and sacrificing ratio.**

**Solution –** *Calculation of New Ratio* Old Ratio of Kabir and Farid 7:3

Kabir sacrifices his share of profit in favour of Jyoti -  $\frac{2}{10}$

Farid sacrifices his share of profit in favour of Jyoti -  $\frac{1}{10}$

Jyoti's Share -  $\frac{2}{10} + \frac{1}{10} = \frac{3}{10}$

**New Ratio = Old Share – Share Sacrificed**

Kabir's New Share -  $\frac{7}{10} - \frac{2}{10} = \frac{5}{10}$

Farid's New Share -  $\frac{3}{10} - \frac{1}{10} = \frac{2}{10}$

New Profit Sharing Ratio - 5:2:3

***Calculation of Sacrificing Ratio***

Since, Kabir and Farid are sacrificing  $\frac{2}{10}$  share and  $\frac{1}{10}$  share respectively, therefore the sacrificing ratio becomes 2: 1.

### Q9 Find New Profit-sharing Ratio:

Solution –

- I. R and T are partners in a firm sharing profits in the ratio of 3:2. S joins the firm. R surrenders  $\frac{1}{4}$ <sup>th</sup> of his share and T  $\frac{1}{5}$ <sup>th</sup> of his share in favour of S.

- I. Old Ratio - 3:2

Sacrificing Ratio = Old share x Surrender Ratio

$$R's \text{ share} = \frac{3}{5} \times \frac{1}{4} = \frac{3}{20}$$

$$T's \text{ share} = \frac{2}{5} \times \frac{1}{5} = \frac{2}{25}$$

New Ratio = Old Ratio – Sacrificing Ratio

$$R \text{ share } \frac{3}{5} - \frac{3}{20} = \frac{9}{20}$$

$$T \text{ share } \frac{2}{5} - \frac{2}{25} = \frac{8}{25}$$

S's Share = R's Sacrificing + S's Sacrifice

$$= \frac{3}{20} + \frac{2}{25} = \frac{23}{100}$$

**New Profit-sharing ratio**

$$R = \frac{9}{20} \times \frac{5}{5} = \frac{45}{100} = 45$$

$$T = \frac{8}{25} \times \frac{4}{4} = \frac{32}{100} = 32$$

$$S - \frac{23}{100} = \frac{23}{100} = 23$$

New profit sharing ratio

$$45:32:23$$

- ii. A & B are partners. They admit C for  $\frac{1}{4}$ <sup>th</sup> share. In future, the ratio between A & B would be 2:1.

- II. Old Ratio - 1:1

C admits for  $\frac{1}{4}$ <sup>th</sup> share of profit

Let the combined share of A, B and C be = 1

Combined share of A and B =  $1 - C's \text{ share}$

$$= 1 - \frac{1}{4} = \frac{3}{4}$$

**New Ratio = Combined share of A and B x 2:1**

$$A's = \frac{3}{4} \times \frac{2}{3} = \frac{6}{12}$$

$$B's = \frac{3}{4} \times \frac{1}{3} = \frac{3}{12}$$

**New Profit sharing ratio**

$$A = \frac{6}{12}$$

$$B = \frac{3}{12}$$

$$C = \frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$$

New profit share

$$6:3:3$$

$$2:1:1$$

iii. A & B are partners sharing profits and losses in the ratio of 3:2. They admit C for  $\frac{1}{5}$ <sup>th</sup> share in the profit. C acquires  $\frac{1}{5}$ <sup>th</sup> of his share from A and  $\frac{4}{5}$ <sup>th</sup> share from B.

III. Old Ratio - 3:2

C admits for  $\frac{1}{5}$ <sup>th</sup> share of profit

$$A's \text{ sacrifice} = C's \text{ share} \times \frac{1}{5}$$

$$= \frac{1}{5} \times \frac{1}{5} = \frac{1}{25}$$

$$B's \text{ sacrifice} = C's \text{ share} \times \frac{4}{5}$$

$$= \frac{1}{5} \times \frac{4}{5} = \frac{4}{25}$$

**New Ratio = Old Ratio – Sacrificing Ratio**

$$A's \text{ share} \frac{3}{5} - \frac{1}{25} = \frac{14}{25}$$

$$B's \text{ share} \frac{2}{5} - \frac{4}{25} = \frac{6}{25}$$

**New Profit sharing ratio**

$$A - \frac{14}{25}$$

$$B - \frac{6}{25}$$

$$C - \frac{1}{5} \times \frac{5}{5} = \frac{5}{25}$$

$$14:6:5$$

- iv. **A, B and C are partners in the ratio of  $1/2:1/3:1/6$ . D joins the firm as a new partner for  $1/6^{\text{th}}$  share in profits. C would retain his original share.**

IV. Old Ratio = 3:2:1

D admits for  $1/6^{\text{th}}$  share of profit

Let combined share of all partner after D's admission be = 1

Combined share of A and B in the new firm =  $1 - \text{Cs share} - \text{D's share}$   
 $= 1 - 1/6 - 1/6 = 4/6$

New Ratio = Old Ratio x Combined share of A and B

A's =  $3/5 \times 4/6 = 12/30$

B's =  $2/5 \times 4/6 = 8/30$

**New Profit sharing ratio**

A =  $12/30 = 12/30 = 12$

B =  $8/30 = 8/30 = 8$

C =  $1/6 = 5/30 = 5$

D =  $1/6 = 5/30 = 5$

- v. **A & B are equal partners. They admit C and D as partners with  $1/5^{\text{th}}$  and  $1/6^{\text{th}}$  share respectively.**

V. Old Ratio = 1:1

C admits for  $1/5^{\text{th}}$  share

D admits for  $1/6^{\text{th}}$  share

Let combined share of all partner after C's and D's admission be = 1

Combined share of profit A and B after C and D's admission =  $1 - \text{C's share} - \text{D's share}$

$= 1 - 1/5 - 1/6 = 19/30$

**New Ratio = Old Ratio x Combined share of A and B**

A's =  $1/2 \times 19/30 = 19/60$

B's =  $1/2 \times 19/30 = 19/60$

**New Profit sharing ratio**

A =  $19/60 = 19/60 = 19$

$$B = 19/60 = 19/60 = 19$$

$$C = 1/5 = 12/60 = 12$$

$$D = 1/6 = 10/60 = 10$$

**vi. A & B are partners sharing profits in the ratio of 5:3. C is admitted for  $3/10^{\text{th}}$  share of profit half of which was gifted by A & the remaining share was taken by C equally from A & B.**

VI. A and B are partners sharing profits in the ratio of 5:3

C's share is  $3/10^{\text{th}}$

$$\text{Gift by A to C} = 3/10 \times 1/2 = 3/20$$

Remaining half taken by C from A and B equally

$$\text{From A and B} = 3/20 \times 1/2 = 3/40$$

$$\text{Given by A in total} = 3/20 + 3/40 = 6 + 3/40 = 9/40$$

**Remaining Share of A and B**

$$A = 5/8 - 9/40 = 25 - 9/40 = 16/40$$

$$B = 3/8 - 3/40 = 15 - 3/40 = 12/40$$

**New Ratio of A, B and C**

$$= 16/40 : 12/40 : 3/10$$

$$= 4 : 3 : 3$$

**Q 10 Mahi and Rajat were in partnership sharing profits and losses in the ratio of 4:3. They admitted Kripa as a new partner; Kripa brought 60,000 as her share of goodwill premium which was entirely credited to Mahi's Capital Account. On the date of admission, goodwill of the firm was valued at 420,000. Calculated the new profit-sharing ratio of Mahi, Rajat and Kripa**

**Solution** - Kripa brought 60,000 as her share of goodwill premium

$$\text{Share of Kripa} = 60,000 / 4, 20,000 = 1/7 \text{ given by Mahi}$$

$$\text{Remaining share of Mahi} = 4/7 - 1/7 = 3/7$$

New Ratio of

$$\text{Mahi} - 3/7$$

$$\text{Rajat} - 3/7$$

$$\text{Kripa} - 1/7$$

New ratio

$$3:3:1$$



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