Partnership

Investment

Same = Time

$\Rightarrow$ Inv (Ratio) = Profit (Ratio)

1) A = 15000 B = 20000

At the end of 1 year

(A+B) = 14000

$$\frac{A}{B} = \frac{15000 \times 12}{20000 \times 12} = \frac{15}{20} = \frac{3}{4}$$

$$A = \frac{3}{7} \times 14000 = 6000 \quad B = 8000$$

2) A = 12000
B = 15000
C = 20000

(Time = Equal/Same)

A : B : C = 12 : 15 : 20

$\checkmark$ $A = \frac{12}{47}$

$\checkmark$ $B = \frac{15}{47}$

$\checkmark$ $C = \frac{20}{47}$

Time = Different

Profit (Ratio) = Inv × Time

A = 15000 B = 20000

After 8 months B left

$\Rightarrow$ at the end of 1 year

$$\frac{A}{B} = \frac{15000 \times 12}{20000 \times 8} = \frac{9}{8}$$

$$\boxed{\frac{A}{B} = \frac{9}{8}}$$

2) A = 25000

After 6 months B joined with 20000

At the end of 1 year

$$\frac{A}{B} = \frac{25000 \times 12}{20000 \times 6} = \frac{5}{2}$$

$$A = \frac{5}{7}$$

$$B = \frac{2}{7}$$

3) A = 4000
B = 5000

After Sometime B left
at the end of 1 year
Total Profit 3300 ₹ is earned
A = 1800 B(Time) = ?

$$\frac{A}{B} = \frac{4000 \times 12}{5000 \times x} = \frac{1800}{1500}$$

$$\frac{48}{5x} = \frac{6}{5}$$

$$5x = \frac{48 \times 5}{6}$$

$$x = 8$$

4) A = 10000
B = x

After 6 months A left the Business
→ A + B = 8000 , B = 6000

$$\frac{A}{B} = \frac{10000 \times 6}{x \times 12} = \frac{2500}{6000}$$

$$B = (x) = 2500 \times 6 = 15000$$

Investment = Different

Initial (Inv × Time) + Later (Inv × Time)

1) A = 10000
   B = 15000

After 4 months
A (add) = 5000
B (withdraw) = 5000

at the end of 1 year

$$\frac{A}{B} = \frac{(10000 \times 4) + (15000 \times 8)}{(15000 \times 4) + (10000 \times 8)} = \frac{40 + 120}{60 + 80} = \frac{160}{140} = \boxed{\frac{8}{7}}$$

$$\frac{A}{B} = \frac{5}{6} = \frac{50}{60}$$

after 4 months A added 20% more than his initial Inv.

at the end of 1 year

$$\frac{A}{B} = \frac{50 \times 4 + (60 \times 8)}{60 \times 12} = \frac{200 + 480}{720}$$

$$\Rightarrow \frac{680}{720} = \boxed{\frac{17}{18}}$$