

(i) Age some years ago (Before)

(ii). Present age

(iii) Age some years hence (After)

Ex, The ratio of present age of A & B is 2 : 3.

The present age of A is 20 years. Find out the age of B after 5 years.

→ Let the age of A is $2x$ and B is $3x$.

$$2x = 20$$

$$3x = 3 \times 10 = 30$$

$$x = 10,$$

$$3x + 5 = 30 + 5 = 35 \text{ years.}$$

or,

$$A : B = 2 : 3 \quad A = 20 \text{ years} \quad B^{+5} = ?$$

$$B = \frac{20 \times 3}{2} = 30 \text{ years.} \quad B^{+5} = 30 + 5 = 35 \text{ years.}$$

Ex, The present ratio of age of A & B is 3 : 5

The sum of present age of A & B is 48 years.

Find the ages of A & B before 5 years.

→ Let the age of A & B be $3x$ years & $5x$ years

$$3x + 5x = 48 \Rightarrow 8x = 48 \Rightarrow x = 6 \text{ years}$$

$$A = 3x = 3 \times 6 = 18 \text{ years} \Rightarrow 18 - 5 = 13 \text{ years}$$

$$B = 5x = 5 \times 6 = 30 \text{ years} \Rightarrow 30 - 5 = 25 \text{ years.}, //$$

Q8.

$$A^o : B^o = 3 : 5 \quad A^{-5} = ?$$

$$(A+B)^o = 48 \text{ years} \quad B^{-5} = ?$$

$$A^o = \frac{3}{8} \times 48 = 18 \text{ years} \quad A^{-5} = 18 - 5 = 13, //$$

$$B^o = \frac{5}{8} \times 48 = 30 \text{ years} \quad B^{-5} = 30 - 5 = 25, //$$

Ex The ratio of ages A & B before 5 years

was 2:3. If the sum of ages of A & B at

Present is 45 years find the present ages of A & B.

→ Let ages of A & B 5 years before are 2x & 3x respectively

$$(2x+5) + (3x+5) = 45$$

$$5x + 10 = 45 \Rightarrow x = 7,$$

The age of A before 5 years = $2x = 2 \times 7 = 14$ years

" " Present = $14 + 5 = 19$ years

The age of B before 5 years = $3x = 3 \times 7 = 21$ years

" " B at present = $21 + 5 = 26$ years.

Q2.

$$A^{-5} : B^{-5} = \underbrace{2:3}$$

$$(A+B)^0 = 45 \text{ years}$$

$$(A+B)^{-5} = 45 - 10 = 35 \text{ years.}$$

$$A^{-5} = \frac{35}{5} \times 2 = 14 \text{ years} \quad A^0 = 14 + 5 = 19,$$

$$B^{-5} = \frac{35}{5} \times 3 = 21 \text{ years} \quad B^0 = 21 + 5 = 26,$$

Sol. The ratio of ages of A & B after 5 years will be 3:5. If the sum of ages of A & B at present is 38 years. find the ages of A & B before 5 years.

→ 5 years after n & B is 3x & 5x

$$(3x - 5) + (5x - 5) = 38$$

$$8x = 48 \Rightarrow x = 6 \text{ years.}$$

After 5 years A = 3x = 3 \times 6 = 18 \text{ years}

" " " B = 5x = 5 \times 6 = 30 \text{ years}

before 5 years A = 3x - 10 = 18 - 10 = 8 years

" " " B = 5x - 10 = 30 - 10 = 20 years.

Q5

$$A^{+5} : B^{+5} = 3 : 5 \quad A^{-5} = ? \quad \& \quad B^{-5} = ?$$

$$(A+B)^{+5} = 38 \text{ years}$$

$$(A+B)^{-5} = 38 + 10 = 48 \text{ years}$$

$$A^{+5} = \frac{3}{8} \times 48 = 18 \text{ years} \quad A^{-5} = 18 - 10 = 8$$

$$B^{+5} = \frac{5}{8} \times 48 = 30 \text{ years} \quad B^{-5} = 30 - 10 = 20$$

\therefore The present ratio of ages of A & B is 6:7.

After 5 years this ratio will be changed into

7:8. find the present ages of A & B.

$$\rightarrow \frac{A}{B} = \frac{6}{7} \quad \frac{A+5}{B+5} = \frac{7}{8}$$

$$A = 30 \text{ years}$$

$$B = 35 \text{ years}$$

Ans

or

$$A^o : B^o = 6 : 7 \quad ; \quad A^{+5} : B^{+5} = 7 : 8$$

↗

$$A^o = \frac{6 \times 5}{1} = 30 \text{ years}$$

$$B^o = \frac{7 \times 5}{1} = 35 \text{ years.}$$

Ex, The ratio of ages of A & B is at present 5:6. If 5 years later the ratio of their ages will be 4:5
find the present age of B.

Ex If Situ's mother was 4 times as old as Situ 10 years ago. After 10 years mother will be twice as old as Situ. How old is mother & Situ at present?

$$\begin{aligned} \Rightarrow S_{\text{m}}^{-10} : S^{-10} &= [4:1] \times 2 = 4:1 \\ S_{\text{m}}^{+10} : S^{+10} &= [2:1] : 3 = \underline{\underline{6:3}} \end{aligned}$$

$$S_{\text{m}}^{+10} = 2^o \times 6 - 10$$

$$Sum^{+10} = \frac{2^0}{2} \times 6 = 6^0$$

$$Sum^0 = 6^0 - 1^0 = 5^0.$$

$$5^0 = \frac{2^0}{2} \times 3 = 3^0$$

$$5^0 = 3^0 - 1^0 = 2 \text{ years.}$$

Ex Jayesh is as much younger to Amit as Jayesh is older to Prashant. If the sum of the ages of Amit & Prashant is 48 years. What is the age of Jayesh in years?

→ Let the age of Jayesh = x years.

$$Amit = \text{years}$$

$$Prashant = \text{years}$$

$$y - x = x - 2$$

$$y + 2 = 2x$$

$$48 = 2x \Rightarrow x = 24 \text{ years. //}$$

S2 Neeraj is as young for Gopal as he is older to Deepak. If the sum of the ages of Gopal & Deepak is 58 years. What is Neeraj's age?

Ans. 29 years.

S3 The ages of A, B and C together totals to 185 years, B is twice as old as A and C is 17 years older than A. Then respective ages of A, B & C are:

→ Let A's age be x years.

$$B's \text{ age} = 2x \text{ ...}$$

$$C's \text{ age} = (x + 17)$$

$$x + 2x + (x + 17) = 185$$

$$4x + 17 = 185 \Rightarrow 4x = 168$$

=

$$\Rightarrow x = 42 \text{ years}$$

$$A = x = 42 \text{ years}$$

$$B = 7x - 2x + 2 = 5x \text{ years}$$

$$C = x + 7 = 42 + 7 = 59 \text{ years.}$$

S2: Ram got married 10 years ago. His present age is $2\frac{1}{3}$ times of age at the time of marriage.

Ram's sister was 4 years younger to him at the time of his marriage. find the present age of Ram's sister?

→ Let present age of Ram is $b - x$ years.

$$\frac{4}{3}(x - 10) = x$$

$$4x - 40 = 3x \Rightarrow x = 40,$$

$$\text{present age of Ram's sister} = 40 - 4 = 36 \text{ years.}$$

S3: The ratio of age of father, mother, son and daughter is 9:8:3:2. The average age of mother and son is 22 years. find the daughter's age after 6 years!

→ Let the present age of father, mother, son and daughter be $9x$, $8x$, $3x$ and $\underline{2x}$.

$$\frac{8x + 3x}{2} = 22$$

$$11x = 44 \Rightarrow x = 4,$$

Daughter's present age is $= 2x = 2 \times 4 = 8$ years

" age after 6 years $= 8 + 6 = 14$ years,

\therefore The present age of two person is 36 & 50 years. If after n years the ratio of their ages becomes $3:5$ then find the value of n ?

$$\rightarrow \frac{36+n}{50+n} = \frac{3}{5}$$

$$\Rightarrow 5(36+n) = 3(50+n)$$

$$\Rightarrow 144 + 4n = 150 + 3n$$

$$\therefore n = 6 \text{ years,}$$