

#LIVE-1

PROBLEMS ON AGES

more than



DAILY TEST

• PRELIMS • MAINS



TEST AFTER LIVE

PROBLEMS ON AGES

BANK EXAM 2024-25

01

In a school, the average age of students is 6 years, and the average age of 12 teachers is 40 years. If the average age of the combined group of all the teachers and students is 7 years, then find the number of students in a school.

$$\begin{aligned} & \text{Student} = x \\ & = \underline{\underline{6x}} \\ & \text{Sum} = 12 \times 40 = \underline{\underline{480}} \\ & 6x + 480 \\ & 12 \times 7 = 84 \\ & 7x = 7x \\ & 6x + 480 = 7x + 84 \\ & \boxed{x = 396} \end{aligned}$$

02

The average age of a class of 30 students and a teacher is reduced by six months if we exclude the teacher. If the initial average is 14 years, find the age of the class teacher.

$$\begin{array}{r} 31 \times \\ 14 \\ \hline 434 \end{array}$$

$$31 \times 14 = \boxed{434}$$

$$30 \times 13.5$$

$$= \underline{\underline{405}}$$

$$\boxed{29} \text{ yrs}$$

13 yrs 6 months

$$13 \text{ yrs } \frac{6}{12} = \frac{1}{2}$$

$$\boxed{13.5 \text{ yrs}}$$

03

The average age of 10 men is increased by two years when one of them, who is 25 years old, is replaced by a new man. Find the present age of a new man?

Total = 10 men

$$Av = (x + 2)$$

$$10x + y - 25 = 10(x + 2)$$

$$10x + y - 25 = 10x + 20$$

$$y - 25 = 20$$

$$y = 45 \text{ yr}$$

04

The sum of the present ages of A and B is $\frac{5}{3}$ of the present ages of C, and the ratio of the ages of A and C is 10:9. If the sum of the present ages of B and C together is 28 years, then find the present ages of A.

$$A : C = 10 : 9$$

$$A = 10x \quad C = 9x$$

$$A + B = \frac{5}{3} \times 9x$$

$$10 \times 2 = 20$$

$$10x + B = \frac{5}{3} \times 9x$$

$$B = 5x$$

$$B + C = 28$$

$$5x + 9x = 28$$

$$14x = 28$$

$$x = 2$$

05

Three years hence, the ratio between the age of Karthi and Janvi will be 7:5. The age of Karthi two years hence is equal to two times of age of Janvi, five years ago. Find the present age of Karthi?

$$K = 7x - 3 + 2 = 7x - 1$$
$$J = 5x - 3 - 5 = 5x - 8$$

$$7x - 1 = 2(5x - 8)$$

$$7x - 1 = 10x - 16$$

$$3x = 15$$

$$x = 5$$

$$7 \times 5 - 3$$

$$35 - 3 = 32$$

06

The ratio of the ages of Ram and Sunil is 5:6 and after ten years, the ratio of Sunil and Shanu is 4:3. If the difference between the ages of Ram and Sunil after 20 years is 9 years, then find the present age of Shanu?

$$(5x + 20) - (6x + 20) = 9$$

$$x = 9$$

$$\text{Ram and Sunil} = 5 : 6 \times 9$$
$$\rightarrow = 54 + 10$$
$$64$$

$$\text{Sunil + Shan}$$

$$4 : 3$$

$$4 = 64$$

$$3 = x$$

$$x = 48$$

$$38$$

#07

The respective ratio between the present ages of the daughter, mother, father, and grandmother is 2:5:6:11. The average age of a daughter and mother is 28 years; what will be a grandmother's age after 12 years?

$$\underline{\underline{2x}} \quad \underline{\underline{5x}} \quad \underline{\underline{6x}} \quad \boxed{11x}$$

$$\frac{2x+5x}{2} = 28$$

$$7x = 56$$

$$\boxed{x=8}$$

$$\begin{aligned} 11 \times 8 \\ = 88 + 12 \\ \text{= } \boxed{100} \\ \underline{\underline{4x}} \end{aligned}$$

08

The present age of a father is 100% greater than the present age of his son. 10 years ago, the age of the father was 200% ^{more} higher than that of his son. What will be the ratio of the ages of father and son after 15 years?

$$\text{Son} = x \quad \text{father} = 2x$$

$$\frac{x-10}{2x-10} = \frac{1}{3} \quad \underline{\underline{3x}} \quad x$$

$$3x - 30 = 2x - 10$$

$$x = 20$$

20

40

~~35~~

~~55~~

7 : 11

Son

Father

11 : 7

9 years ago, the ratio of Amit and Punit's ages was 14:17, respectively, and the age of Punit 9 years ago is the same as the present age of Amit. Then Find the present ages of Amit and Punit.

14:17

$$\begin{array}{r} 14x \\ \hline 14x + 9 \end{array}$$

$$17x = 1.44$$

$$3x = 9$$

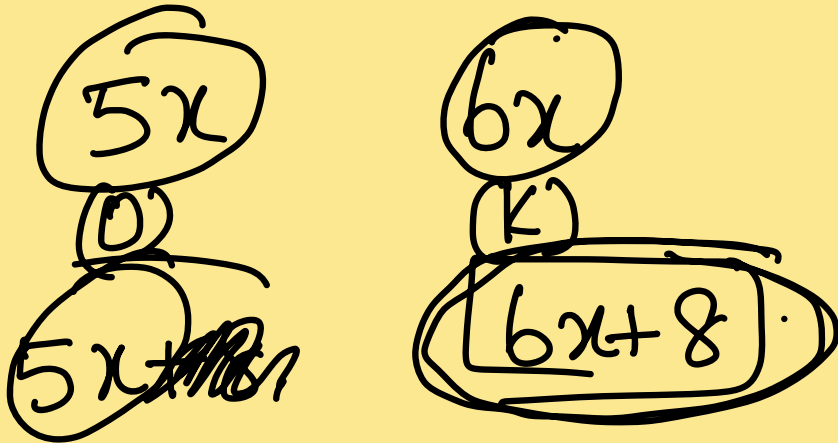
$x=3$

$$14x + 9 = 512_{\text{yen.}}$$

$$17x + 9 = 60 \quad | -9$$

#10

The ratio of the ages of Oviya to Kavin is 5:6.
Kavin's age after 8 years is 100% more than
Oviya's two years ago. Find the average present
age of Oviya and Kavin?



$$6x + 8 = \underline{\underline{200}} (\underline{\underline{5x - 2}})$$

$$6x + 8 = 2(5x - 2)$$

$$6x + 8 = 10x - 4$$

$$4x = 12 \quad x = 3$$

$$\frac{15 + 18}{2} = \frac{33}{2} = \underline{\underline{16.5}}$$

#11

The ratio of the present age of A to that of B is 3:2, and the ratio of the present age of A to that of C is 3:5. If the average present age of A, B, and C is 20 years, then find the age of B after 8 years.

$$A : B = 3 : 2$$

$$A : C = 3 : 5$$

$$A : B : C = 3 : 2 : 5$$

$$\underline{3x} \quad \underline{2x} \quad \underline{5x}$$

$$\frac{10x}{3} = 20$$

$$10x = 60$$
$$x = 6$$

$$12 + 8$$

$$= 20 \text{ yrs}$$

#12

The present ages of the mother and son are 28 years and 7 years, respectively. If the ratio of their ages will be 11:4 after x years, then find the value of x.

$$\frac{28+x}{7+x} = \frac{11}{4}$$

$$11(2+4x) = 77 + x11$$

$$x =$$

(C)

(a)

(d)

(b)

#13

If the average of the ages of Rakesh and Mohan is 15 years, the average of the ages of Mohan and Rajesh is 12 years, and the average of the ages of Rajesh and Ramesh is 13 years. Find the difference between the ages of Rakesh and Rajesh.

$$\begin{array}{r} A + B = 30 \\ = 24 \\ 26 \end{array}$$

Cannot be determined

$$2A + 2B + 2C = 80$$

$$(A + B + C) = 40 = 16 - 6$$

#14

Three years ago the ratio of the age of A to B was 3:4. The present age of C is 33.33% more than that of A, and the sum of the present ages of B and C together is 71 years. Find the difference between the present age of A and B.

$$\frac{3x+3}{A}$$

$$\frac{4x+3}{B}$$

$$\begin{array}{r} 27 \quad 35 \\ \checkmark \\ \hline 84 \end{array}$$

$$B + C = 71$$

$$4x+3 + 133.33\% \cdot (3x+3) = 71$$

$$4x+3 + \frac{4}{3}(3x+3) = 71$$

$$24x + 12x + 9 + 12 = 71 \times 3$$

$$24x = 21 - 213$$

$$x = 8$$

#15

The present age of Mathi is 120% of the age of Sunil at that time, and the ratio of the present age of Sunil to Bala is 5: 8. If the age of Mathi five years hence is equal to the age of Bala five years ago, then find the present age of Sunil.

Su: Bala

5 : 8

5x 8x

6
~~120~~
~~100~~ x 5x
2
6x
Mathi

$$6x + 5 = 8x - 5$$

$$2x = 10$$

$$\boxed{x = 5}$$

$$5 \times 5 = \boxed{25}$$

#16

Six years ago, the age of $\overset{2x}{S}$ was twice the age of $\overset{x}{K}$, and the ratio of their present age is 5:3. Then find the difference between their ages.

$$\frac{2x+6}{x+6} = \frac{5}{3}$$

$$6x+18 = 5x+30$$

$$x = 12$$

#17

The ratio of the ages of Shon and Sania before six years is 4:5, and the ratio of the ages of Shon and Sania after 12 years will be 7:8. Find the ratio of the present age of Shon to Sania?

$$4x$$

$$5x$$

$$\boxed{4x+6+12} / 5x+6+12 = 7/8$$

$$\frac{4x+18}{5x+18} = 7/8$$

$$32x + 144 = 35x + 126$$

$$3x = 18$$

$$x = 6$$

$$30 : 36$$

$$5 : 6$$

$$4x+6$$

$$30$$

$$5x+6$$

$$36$$

#18

The ratio of the present ages of Priya and Queen is 6:5, and the ratio of the present ages of Reshma and Shabhana is 5:6. If Shabhana is 8 years older than Queen and Reshma is 3 years older than Priya, then find the sum of the ages of Priya, Queen, Reshma, and Shabhana.

$$\begin{aligned} \text{Priya} &= 6x & Q &= 5x \\ \text{Resh} &= 5y & \text{Shab} &= 6y \end{aligned}$$
$$\begin{array}{r} 12 + 10 \\ + 15 + \\ 18 \\ \hline 5 \end{array}$$
$$\begin{aligned} 6y - 5x &= 8 \quad \text{--- (1)} \\ 5y - 6x &= 3 \quad \text{--- (2)} \end{aligned}$$
$$\begin{aligned} 36y - 30x &= 48 \\ - 25y - 30x &= 15 \\ \hline 11y &= 3 \end{aligned}$$
$$y = 3 \quad x = 2$$

#19

The present age of Arun is 10% more than the present age of Ashwin. Arun is 4 years older than Arjun. Anish will be 3 years older than Arjun. Find the present age of Anish, if the average present age of all four people together is 31 years.

$$\underline{\underline{\text{Ashwin}}} = \underline{\underline{x}}, \quad \text{Ar} = x + 10\%x = \underline{\underline{1.1x}}$$

$$\text{Arjun} = \underline{\underline{1.1x - 4}}$$

$$\text{Anish} = 1.1x - 4 + 3 = \underline{\underline{1.1x - 1}} \rightarrow 129$$

$$\frac{x + 1.1x + 1.1x - 4 + 1.1x - 1}{4} = 31 \times 2$$

$$\Rightarrow 62 \times 2 = 124$$

$$(30)x$$

$$(32)$$

$$\underline{x + 10\%x}$$

$$x + \frac{10}{100}x$$

$$x + \frac{1}{10}x$$

$$\frac{10x + x}{10}$$

$$(1.1x)$$

20

The ratio of the ages of Anil and Sunil 6 years ago was 8:5, respectively. After 2 years, the age of Sunil will be 25% less than that of Anil. What is the present age of Anil?

$$\begin{array}{l} 8x \\ \text{Anil} \\ +6 \\ \hline 8x+8 \end{array}$$

$$\begin{array}{l} 5x \\ \text{Sunil} \end{array}$$

$$5x+8$$

$$5x+8 = \frac{75}{100} (8x+8)$$

$$20x+32 = 24x+24$$

$$4x=8 \quad \text{22 yrs.}$$

$$x=2$$

TEST

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9 PM