TOPICS
TO BE COVERED

- Ratio & Proportion Glimpse with Practice Questions

- Concepts & Numerical based on Partnership

- Concepts & Numerical based on Variation

- Previous DPP Questions Discussion

A B

B C

A B

$$\overline{(2 \quad 5)} = 7 \qquad A = \frac{2}{7} \times 700$$

700

? Ten years ago, Arpita was half of Bhavya in age. If the ratio of their present age is 3 : 4, what will be the total of their present ages?

$$3 \quad 4 = \boxed{7}$$

A 35 years

B 40 years

C 45 years

D 50 years

$$\frac{3x}{4x}$$
$$\frac{4x}{7x}$$

$$(3x - 10) = \frac{1}{2}(4x - 10)$$

Ankit gives 60% of his salary to his wife and she spends 40% of the amount she gets on food. Out of the remaining amount, respective ratio between the amount she spends on children education and the amount she keeps as saving is 4 : 11. If she spends Rs.2880 on the children education, then what is the Ankit's salary?

(A) Rs. 27000

(B) Rs. 22000

(C) Rs. 30000

(D) Rs. 24000

let. $A = 100$

$W = 60$

$F = 24$

$R = 36$

$9.6 \xrightarrow{} 2880$

$100 \xrightarrow{} x$

$x = \dfrac{2880 \times 100}{9.6}$

$CE = \dfrac{4}{15} \times 36 = 9.6$
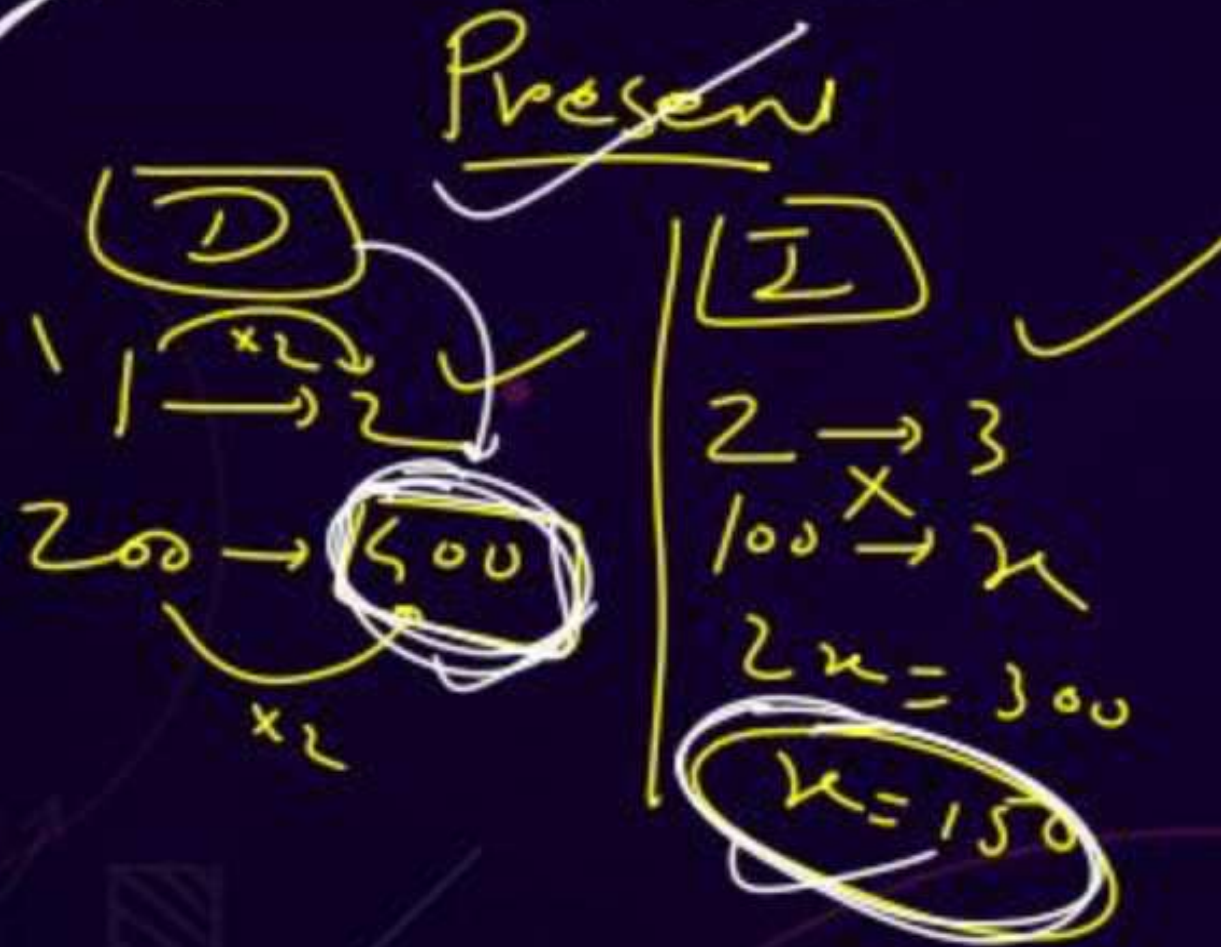
The ratio of number of runs scored by a cricketer in domestic and international matches last year was 2 : 1. This year, his performance in domestic matches improved in the ratio of 1 : 2 and international ones, in the ratio of 2 : 3. If the total score this year in domestic and international matches was 2,200 runs, how many runs did he score in international matches last year?

A. 400

B. 800

C. 500

D. 600

$$x = \frac{2200 \times 100}{550}$$

Last $D \quad I$

$2 \quad 1$

$D = 200$

$I = 100$

Present

D
$1 \xrightarrow{\times 2} 2$
$200 \to 500$

I
$2 \to 3$
$100 \xrightarrow{\times} x$
$2x = 300$
$x = 150$

$\frac{550}{100} \xrightarrow{\times} \frac{2200}{x}$

? A bag contains Rs. 6500 in the form of one rupee, 50 paise and 25 paise coins in the ratio of 5 : 6 : 8. Find the total number of 25 paise coins in the bag?

P W

$$\begin{array}{cccc} & Re\,1 & 50p & 25p \\ & 5 & 6 & 8 \end{array}$$

$$x = \frac{8 \times 6500}{10}$$

A 650

B 6000

$$5 + 3 + 2 = \boxed{10}$$

C 5200

$$Re.1 \rightarrow 5$$
$$50p \rightarrow 6$$
$$25p \rightarrow \boxed{8}$$

D 1300

$$10 \quad \overset{650}{\cancel{X}} \; 6500$$
$$8 \qquad x$$

In an election, there were four candidates and 80% of the registered voters casted their votes. One of the candidates received 30% of the casted votes while the other three candidates received the remaining casted votes in the proportion $1 : 2 : 3$. If the winner of the election received 2512 votes more than the candidate with the second highest votes, then the number of registered voters
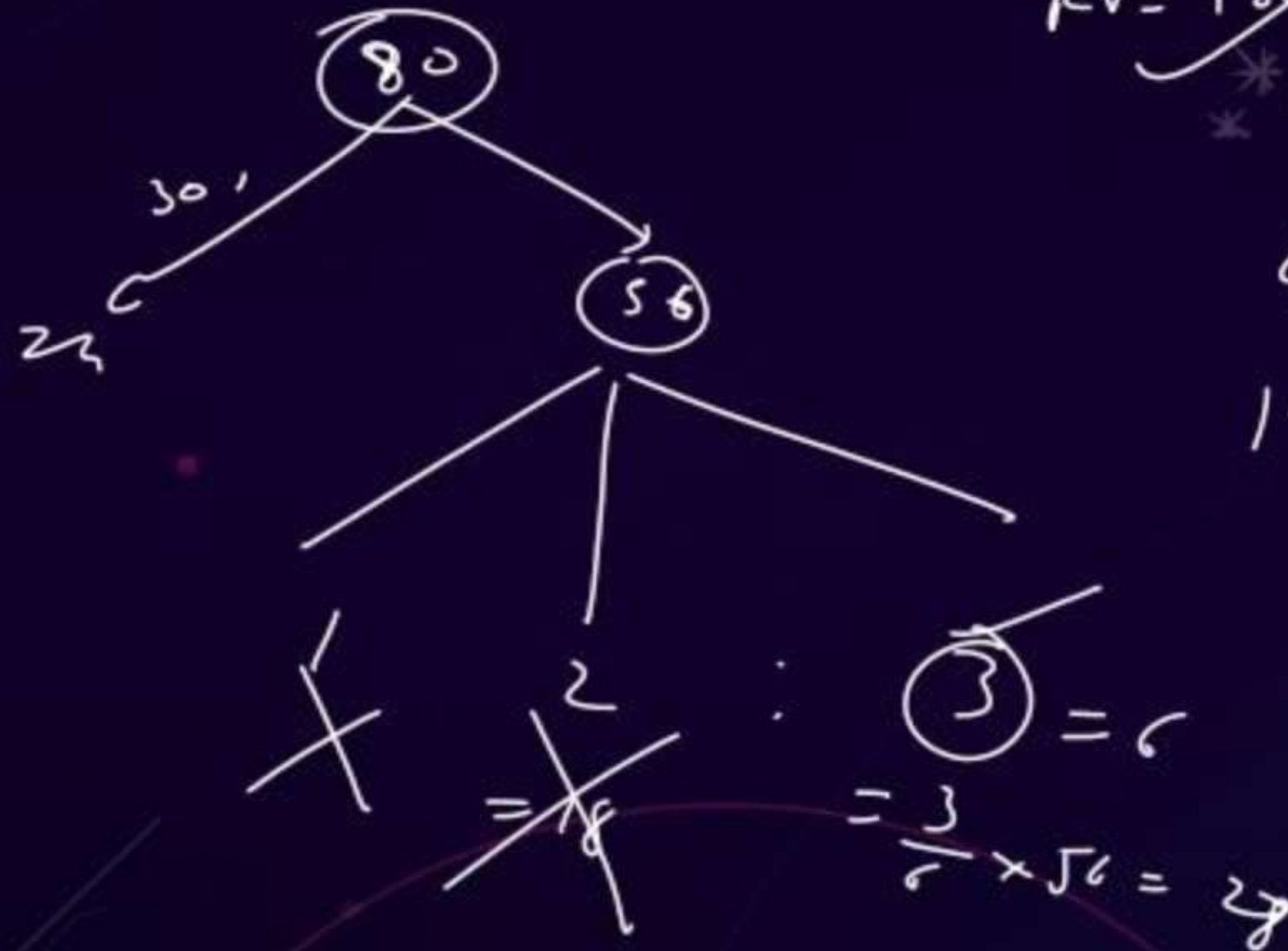
(CAT 2022)

A 62800

B 50240

C 60288

D 40192

$$A = 5000$$
$$B = 7000$$

$$Profit = 144000$$

$$A : B$$
$$5 \quad 7$$

$$B = \frac{7}{12} \times 144000 \overset{12000}{}$$
$$= \underline{84000}$$

$$A = \fbox{5000} @ 6 m$$

$$B = \fbox{7000} @ \fbox{7} m$$

$$A : B$$

$$(5000 \times 6) \quad (7000 \times 7)$$

$$\underline{30 . 49}$$

$$period = 1\,yr = 12\,m$$

$$\boxed{profit}$$

$$\boxed{A = 6000} \times 12$$

$$B = 5000 \times \cancel{9}.7$$

$$A : B$$

$$(6000 \times 12) \quad (5000 \times 7)$$

$$\boxed{72 . 35}$$

A and B invest Rs. 7000 and Rs. 2000 respectively in a business. What should be the share of B in a profit of Rs. 900, at the end of a year?

A Rs. 200

B Rs. 140

C Rs. 120

D Rs. 300

$A = 7000$

$B = 2000$

$\dfrac{A}{7} \quad \dfrac{B}{2} = 9$

$B = \dfrac{2}{9} \times 900 = 200$

$$A + B$$

A and B together invested Rs. 10000 in a business. At the end of the year, out of a profit of Rs. 500, B's share was Rs. 150. What was A's investment?

(P) (W)

(A) Rs. 5000

Profit = 500

(B) Rs. 5500

(C) Rs. 5200

$B = 150$ $A = 350$

(D) None of these

A   B
350 150

$$\frac{350}{150} = 10$$

$$A = \frac{7}{10} \times 10000$$
$$= 7000$$

In a partnership business, A invests Rs. 20000 for two years, B invests Rs. 40000 for $1\frac{1}{2}$ years, C invests Rs. 30000 for one year and D invests Rs. 35000 for two years. Out of the total profit made, C gets a share of 20% as a 'working partner' before the profit is further distributed amongst all of them. What would be the share of C in the total profit of Rs. 25000?

A. Rs. 9000

B. Rs. 7800

C. Rs. 11000

D. Rs. 8000

A and B invest Rs. 3000 and Rs. 2000 respectively in a business. A was a sleeping partner. At the end of one month, both get Rs. 150 each. What was B's remuneration for his work?

(A) Rs. 60

(B) Rs. 40

(C) Rs. 50

(D) Rs. 30

$$\boxed{A \quad B}$$

$$\boxed{3 \quad 2}$$

$$\frac{\textcircled{A}}{B} = \frac{3}{2}$$

$$\frac{150}{B} \times \frac{3}{2}$$

$$\boxed{B = 100}$$

$$\boxed{A = 150} \longrightarrow In$$

$$\boxed{B = 150}$$

$$In = 100 \qquad 50 = w$$

A. B and C invest Rs. 4000, Rs. 5000 and Rs. 6000 respectively in a business. A gets 25% of the profits for managing the business and the rest of the profit is divided in the proportion of their investments. If, in a year, A gets Rs. 100 less than B and C together, what was the profit that year?

(A) Rs. 500

(B) Rs. 600

(C) Rs. 1000

(D) None of these

? A starts a business with a capital of Rs. 10000 and four months later, B joins him with his capital of Rs. 6000. What is the share of B in the profit of Rs. 2100 at the end of the year?

$$\text{period} = 12m$$

$$A = 10000 @ 12m$$

$$B = \frac{2}{7} \times 2100^{300}$$

$$B = 6000 @ 8m$$

$$= 600$$

(A) Rs. 500

(B) Rs. 600

(C) Rs. 1200

(D) Rs. 1500

$$A \quad B$$
$$120:48$$
$$5 \quad 2$$

A, B, C, started a business with their investment in the ratio 1 : 4 : 6. After 6 months, A invested the same amount as before and B as well as C, withdrew half of their investments. The ratio of their profits at the end of the year is

A 1 : 2 : 3

B 3 : 4 : 15

C 3 : 5 : 10

D 3 : 6 : 8

A . B C
1 2 3

$A = 100$
$B = 400$
$C = 600$

12 m

$A = (100 \times 6) + (200 \times 6) = 1800$

$B = (400 \times 6) + (200 \times 6) = 3600$

$C = (600 \times 6) + (300 \times 6) = 5400$

Mukesh and Anil started a business in partnership. Anil invested Rs. 300 more than Mukesh for half the number of months that Mukesh did. If, out of the total profit of Rs. 375 of one year, Mukesh got Rs. 25 more than Anil, what was the investment made by Anil?

(A) Rs. 800

(B) Rs. 700

(C) Rs. 400

(D) None of these

$M = M$ ① ②

$A = (x + 300)$ ①

$\dfrac{M}{A} = \dfrac{2n}{x + 300}$

$\dfrac{8}{7} \times \dfrac{2x}{x+300}$

$x = 500$

$A = y$

$M = y + 25$

$2y = 350$

$y = 175$

$2y + 25 = 375$

375

$\dfrac{M}{A}$

$= 175$ 175

$+ 25$

$\dfrac{}{350}$

8 . 7

(23)

B invests Rs. 500 more than A in a business but A's investment is in the business for 4 months whereas B's investment is for 3 months only. If A's share of total profit of Rs. 520 is Rs. 40 more than B's, how much did A contribute in the business?

(A) 2500

(B) 3000

(C) 3500

(D) 2800

A started a business with Rs. 21000 and is joined afterwards by B with Rs. 36000. After how many months did B join if the profits at the end of the year are divided equally?

(A) 3

(B) 4

(C) 5

(D) 6

HW

$\uparrow\downarrow \quad \downarrow\uparrow$

Inver

Dire

Directly

$$x \propto y$$

$$x = ky$$

Solu

Inversly

$$x \propto \frac{1}{y}$$

$$x = \frac{k}{y}$$

$A \propto B$

$A \propto \frac{1}{c}$

$A \propto \frac{B}{c}$

$$A = k\frac{B}{c}$$

A wheel that has 6 cogs is meshed with a larger wheel of 14 cogs. When the smaller wheel has made 21 revolutions, then the number of revolutions mad by the larger wheel is:

A) 4

B) 9

C) 12

D) 49

$$Size \propto \frac{1}{No \, of \, Re}$$

$$(N \cdot R \cdot A \cdot u \cdot e)$$

$$\boxed{S = \frac{k}{N}}$$

$$6 = \frac{k}{21}$$

$$\boxed{126 = k}$$

$$14 = \frac{126}{N}$$

$$N = \frac{126}{14} = 9$$

Running at the same constant rate, 6 identical machines can produce a total of 270 bottles per minute. At this rate, how many bottles could 10 such machines produce in 4 minutes?

(P)
(W)

A 648

B 1800

C 2700

D 10800

No. of m/c & No. of Bolt produced

$6 \longrightarrow 270/mn$
$\times$
$10 \longrightarrow x$

$\boxed{x = 450}/min$

$450/min$
$\times \quad 4 \, min$
_____
1800

? If A varies directly as B and inversely as C and $\underline{A = 6}$, when $\underline{B = 2}$ and $C = 3$, what is the value of A when $B = 8$ and $C = 6$?

P **W**

A 12

B 6

C 18

D 24

$$A \propto B$$
$$A \propto \frac{1}{C}$$

$$A \propto \frac{B}{C}$$

$$A = k \frac{B}{C} \implies A = \frac{3}{9} \times \frac{8^4}{6_2} = 12$$

$$6 = k \frac{2}{3}$$
$$9 = \frac{18}{2} = k$$

? If 100 cats kill 100 mice in 100 days, then 4 cats would kill 4 mice in how many days?

$$\frac{\text{No of cats}}{C} \qquad \frac{\text{No of mice}}{M} \qquad \frac{\text{No of days}}{D}$$

A 1 day

B 4 days

C 40 days

D 100 days

$$C \propto M$$
$$C \propto \frac{1}{D}$$

$$C = k\frac{M}{D} \implies k = \frac{100}{D}$$

$$100 = k\frac{100}{100}$$
$$100 = k$$

$$1 = \frac{100}{D \times 100}$$
$$D = 100$$

In a dairy farm, 40 cows eat 40 bags of husk in 40 days. In how many days one cow will eat one bag of husk?

A   1

B $\dfrac{1}{40}$

C   40

D   80

A precious stone weighing 35 grams worth Rs. 12250 is accidently dropped and gets broken into two pieces having weights in the ratio of 2:5. If the price varies as the square of the weight then find the loss incurred.

(A) Rs. 5750

(B) Rs. 6000

(C) Rs. 5500

(D) Rs. 5000

DPP Questions Discussion

? The ratio of monthly income of P & Q is 6 : 7 and that of their monthly expenditure is 4 : 5. If the income of P is twice the expenditure of Q, then what is the ratio between the savings of P & Q?

P W

(A) 10 : 9

(B) 9 : 10

(C) 3 : 7

(D) 6 : 5

$P : Q = 6 : 7$ $P : Q = 4 : 5$

(I)
$P = 6x = 30$ $P = 4y = 12$ (II)
$Q = 7x = 35$ $Q = 5y = 15$

$6x = 2(5y)$

$6x = 10y$

$\dfrac{x}{y} = \dfrac{10}{6} = \dfrac{5}{3}$

$\dfrac{S_P}{S_Q} = \dfrac{18}{26} = \dfrac{9}{10}$

Kumar planned a weekend trip with his family to Lonavala. They planned various activities during the trip. They went there, and had lots of fun. One night they sat all together and started discussing their salaries. Kumar stated, "one-third of my salary, two-fifth of my brother's salary, half of my wife's salary and three-fourth of my son's salary are the same." If the total family income is Rs. 636000, what are the salaries earned by Kumar and his son together?

A Rs. 140000

B Rs. 476000

C Rs. 312000

D Rs. 284000

$$\frac{1}{3}D = \frac{2}{5}B = \frac{1}{2}W = \frac{3}{5}S = 6$$

$$k = 18 \quad w = 12$$
$$B = 15 \quad S = \frac{2}{3} \times 6 \times \frac{6}{5} = 8$$

$$53 \rightarrow 636000$$
$$26 \rightarrow ?$$

The property rates per sq. feet are $16\frac{2}{3}\%$ less in locality B as compared to locality A, while that in locality C is less by 25% as compared to locality B. Property rates per sq. feet are 50% more in locality D as compared to locality E. Property rates in locality A is same as locality E. If Mohan purchases 100 sq. feet properties in both C and D each, the average rate at which he pays is Rs. 255 per square feet. If he instead purchased 100 sq. feet properties in both A and E each, the amount he needs to pay in Rs. Would be

(A) Rs. 51000

(B) Rs. 50000

(C) Rs. 49000

(D) Rs. 48000

(handwritten working)

200×260

Per 1 feet

$B = 600 - 100 = 500$

let, $A = 6.00$

$C = 500 - 125 = 375$

$D = 600 + 300 = 900$

$E = 6.00$

$\frac{275}{x} \times \to 255$

$\frac{1200}{x}$

$x = \frac{1200 \times 255}{1275}$

$x = \frac{1275}{117}$

260

The sum of the present age of Chandan & his wife is 60 years. After 4 years, this ratio will be 9 : 8. When they were married, the sum of their ages was 50 years, then find the ratio of their ages at the time of their marriage.

(A) 7 : 6

(B) 27 : 23

(C) 9 : 8

(D) None of these

In a bag, there are 150 coins having denominations Re. 1, Rs. 2 and Rs. 5 with at least one coin of each denomination being present in the bag. The total value of Re. 1 coins is at least 50% of the total value of the coin in the bag. If there are 23 Rs. 5 coins and the total value of Rs. 2 coins is at least 3% of the total value of the coins in the bag, find the total number of Rs. 2 coins in the bag.

(A) 1

(B) 2

(C) 3

(D) 4