Percentage

1) Unitary Method

2) Considering 100 or LCM

3) % Increase/Decreased using fraction

$\frac{A}{B} = \frac{4}{5}$

1) B is 25% more than A = 4

$\xrightarrow{1/4}$

$\Rightarrow$ A = 100, B = 125

$\frac{A}{B} = \frac{100}{125} = \frac{4}{5}$

2) A is 20% less than B

$\xrightarrow{1/5}$

$\frac{A}{B} = \frac{4}{5}$

If 60% of A's income is equal to 75% of B's income. then B's income is equal to % of A's income. The value of is

1. 60
(b) 40
(c) 80
(d) 120
(e) 160

60% of A = 75% of B

$\frac{A}{B} = \frac{75\%}{60\%} = \frac{5}{4}$

$\Rightarrow$ B is what % of A ?

4 5

$= \frac{4}{5} \times 100 = 80\%$

x is what % of y ?

$x = 8\%$ of y

$x = \frac{8 \times y}{100}$

$8 = \frac{x}{y} \times 100$

There are 150 travelers going to picnic at Goa from Aurangabad out of which 20% using their own car and 40% using bus and rest were going by Air then find how travelers using Car and Air together ?

a) 100
b) 80
c) 120
d) 150
e) 90

Total = 150

Car = 20% + Bus = 40%] → 60%

+ [Air = 40%] ← (100 - 60)

Car + Air = 20% + 40% = 60% of 150 = 90

30 Litres of water is added to 60 litres of a solution (mixture) containing 30% alcohol in water. What is the concentration of alcohol in solution now?

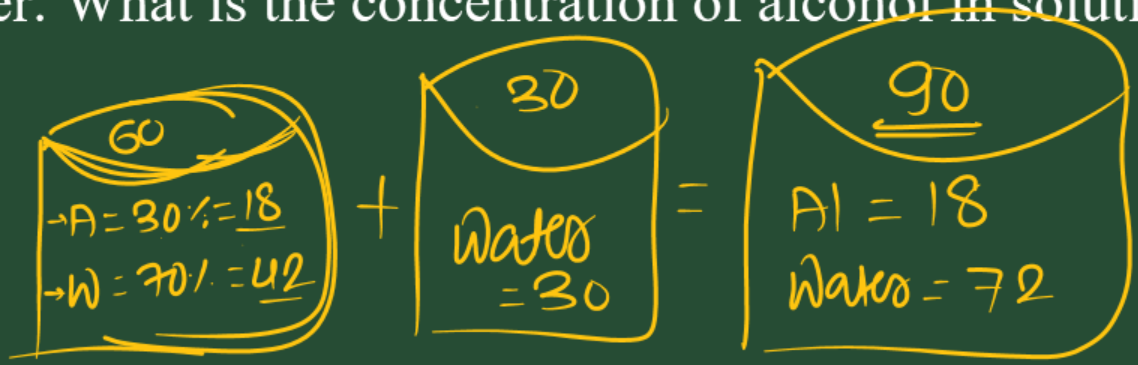
a) 45%

b) 20 %

c) 30 %

d) 45.66%

e) 55 %



$$\frac{\text{Alcohol}}{\text{Total}} \times 100 = \frac{18}{90} \times 100 = \boxed{20\%}$$

An investor earns 3% return on 1/4 th of his capital, 5% on 2/3 rd and 11% on the remainder. What is the average rate of return he earns on his total capital?

1. 5%
(b) 10%
(c) 8%
(d) 6.5%
(e) 9%

Capital = 1200

First = $\frac{1}{4} \times 1200 = 300$ — 3% — 9

Second = $\frac{2}{3} \times 1200 = 800$ — 5% — 40

Remainder = (1200 − 1100) = 100 — 11% — 11

60

Profit = $\frac{60}{1200} \times 100 = 5\%$

Rahul spent 20% of his monthly income on education, 15% on clothing and 25% on entertainment, after gives remaining 6000 to his wife find his total monthly income ?

a) 10000
b) 15000
c) 12000
d) 14000
e) 18000

Total = 100

Edu = 20%

Clothing = 15%

Enter = 25%

Exp = 60%

Wife = (100 - 60) = 40 ×150 6000

100 ×150 15000

A's income is 75% ($\frac{3}{4}$) of B's income and A's expenditure is 60% ($\frac{3}{5}$) of B's expenditure. If A's income is 80% of B's expenditure, then find the ratio of A's savings to B's savings.

1. 1 : 2
(b) 2 : 1
(c) 5 : 2
(d) 3 : 1
(e) 5 : 3

	In	− Ex	= Sa	
A	$3x = 12$	$3y = 9$		$(12-9) = 3$
B	$4x = 16$	$5y = 15$		$(16-15) = 1$

$\Rightarrow 3x = 80\%\ 5y \Rightarrow A(In) = 80\%\ B(Ex)$

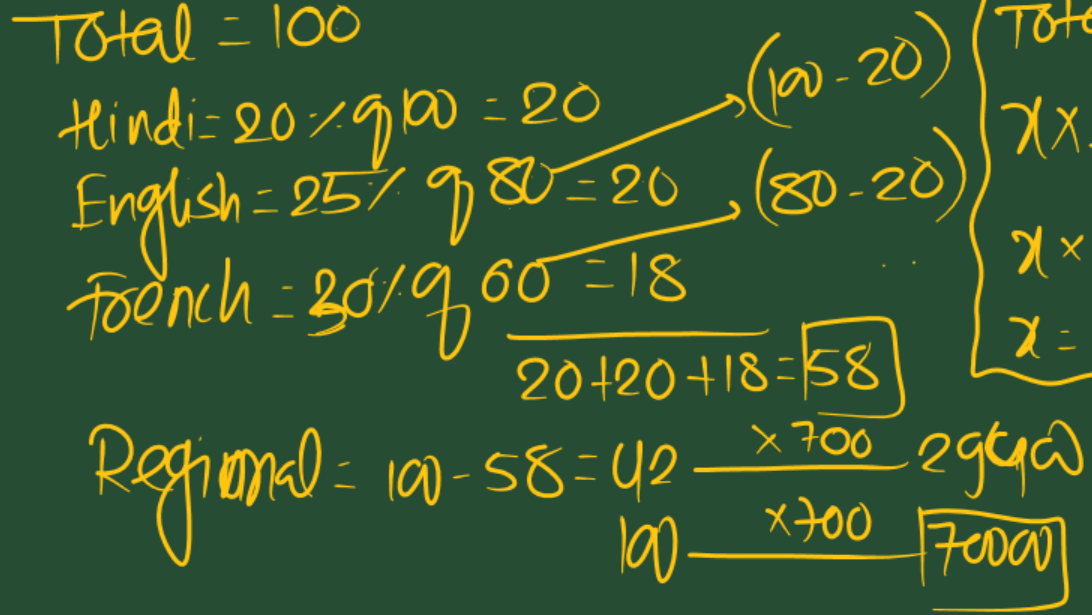
$3x = \frac{4}{5} \times 5y$

$3x = 4y$

$\frac{x}{y} = \frac{4}{3}$

In a library, 20% of the books are in Hindi, 25% of the remaining are in English and 30% of the remaining are in French. The remaining 29400 books are in regional language. What is the total number of books in the library?

1. 50000
(b) 70000
(c) 60000
(d) 80000
(e) 75000



Ritu, Payal and Sakshi's present salaries are in the ratio of 3 : 5 : 7. In the next year, their salaries increase by 20%, 25% and 30% respectively, find the ratio of their salaries next year.

1. 72 : 125 : 182
(b) 125 : 72 : 182
(c) 182 : 125 : 72
(d) 21 : 53 : 123
(e) 3 : 8 : 11

Ritu : Payal : Sakshi = 3 : 5 : 7 = 300 : 500 : 700

+60 (20%) 125 (25%) 210 (30%)

360 : 625 : 910

= 72 : 125 : 182

The population of a town decrease by 10% during the first year, decrease by 15% during the second year and again decreases by 20% during the third year. If the present population of the town is 15300 then what was the population of the town three years ago?

1. 20000
(b) 15000
(c) 25000
(d) 30000
(e) 28000

I)

I II III

100 $\xrightarrow[-10]{10\% \downarrow}$ 90 $\xrightarrow[13.5]{15\%}$ 76.5 $\xrightarrow[-15.3]{-20\%}$ 61.2

61.2 $\xrightarrow{\times 250}$ 15300

100 $\xrightarrow{\times 250}$? = 25000

II) $x \times \frac{9}{10} \times \frac{17}{20} \times \frac{4}{5} = 15300$

$x = 25000$

Out of his total income, Mr Kapoor spends 20% on house rent and 70% of the remaining on household expenses. If he saves Rs. 1800 what is his total income (in rupees)?

a) Rs. 7800
b) Rs. 7000
c) Rs. 8000
d) Rs.. 7500
e) None of these

$x \times \frac{4}{5} \times \frac{3}{10} = 1800 - 150$

$x = 7500$

Income = 100

House Rent = 20% of 100 = 20

Household = 70% of 80 = 56 ← (100 − 20)

Total Exp → 76

Saving = In − Ex

Saving = 24% × 300 = 1800

1% × 300 = 75

100 → 7500

Pradip spends 40 per cent of his monthly income on food items, and 50 per cent of the remaining on clothes and conveyance. He saves one-third of the remaining amount after spending on food, clothes and conveyance. If he saves Rs 19,200 every year, what is his monthly income ?

A. Rs. 24000
B. Rs. 12000
C. Rs. 16000
D. Rs. 20000
E. None of these

(60%) (50%) ($\frac{1}{3}$)

$x \times \frac{3}{5} \times \frac{1}{2} \times \frac{1}{3} = 1600$

$\frac{19200}{12} = 1600$

$x = 16000$

Total = 300
Food = 40% of 300 = 120
Cloth = 50% of 180 = 90
Remaining = 90

$\frac{1}{3}$ of 90 = 30 = saving

30 — 1600
300 — 16000

Mr. Keisham gave 40% of the money he had, to his wife. He also gave 20% of the remaining amount to each of his three sons, Half of the amount now left was spent on miscellaneous item and the remaining amount of Rs. 12,000 was deposited in the bank. How much money did Mr. Keisham have initially ?

A. 1,000 B. 10,000 C. 1,00,000 D. 10,00,000 E. 20,000

$x \times \frac{3}{5} \times \frac{2}{5} \times \frac{1}{2} = 12000 - 4000$

$x = 100000$

A person had a certain amount. He invested 5/6th of it in shares. 5% of it in mutual funds. 10% of it in debentures and kept the remaining Rs. 850 with him. If got interest at 10% for a year on debentures, what amount did he get as interest?

a) Rs. 5100
b) Rs. 7650
c) Rs. 510
d) Rs. 765
e) None

Total = 600

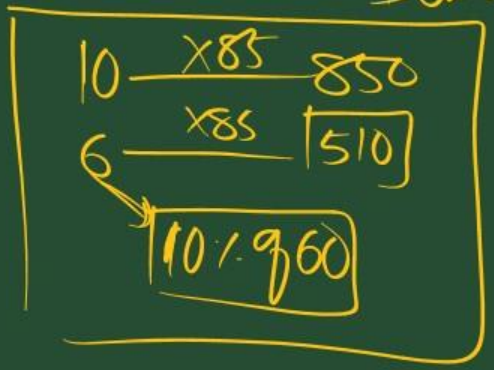
Shares = $\frac{5}{6} \times 600 = 500$

Mutual = 5% of 600 = 30

Debal = 10% of 600 = 60

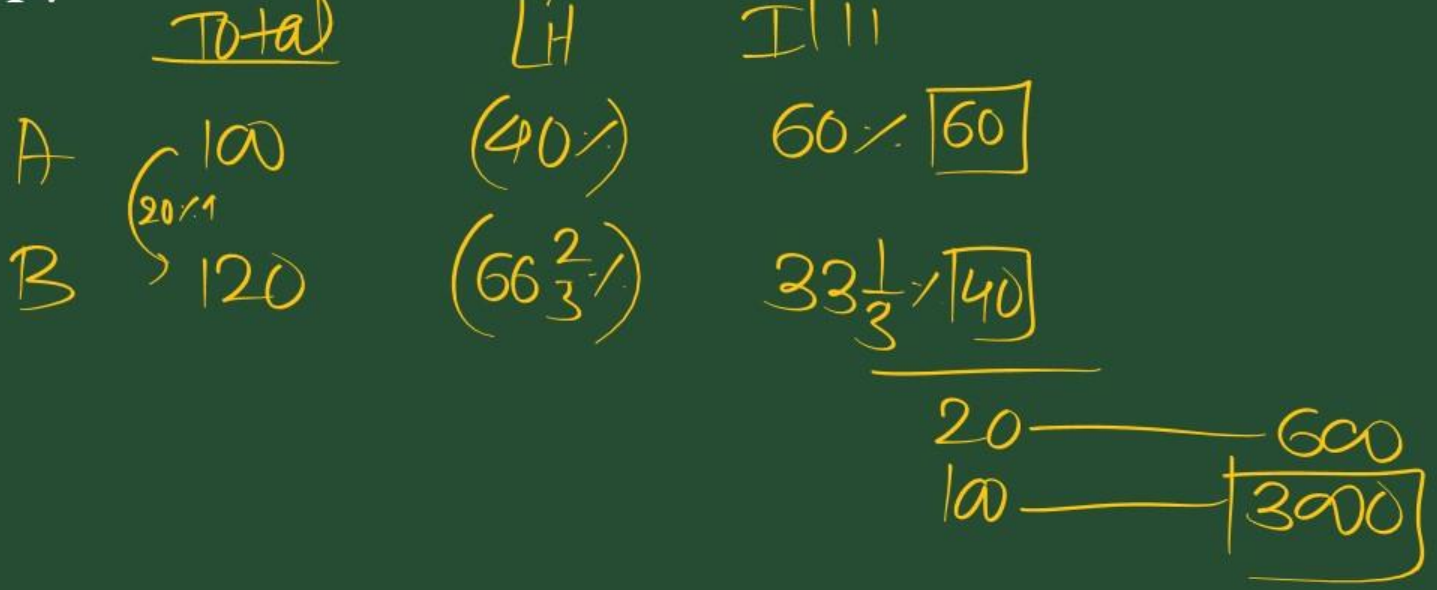
IN → 590

Saving → 10



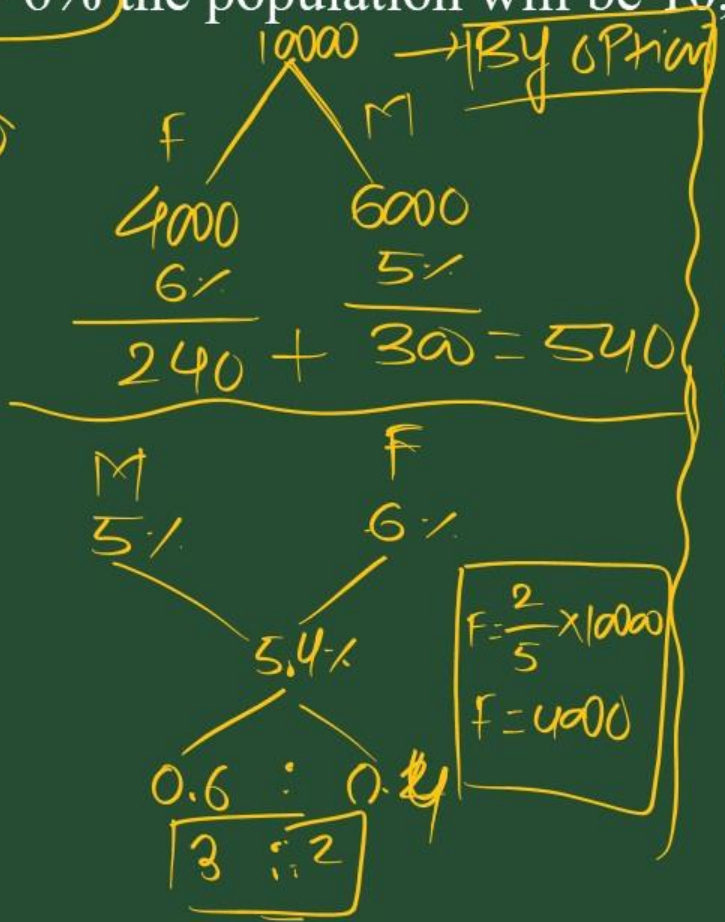
Population of city B is 20% more than city A. If 40% and 66 2/3 % of population of city A and city B respectively is literate and the difference between the number of illiterate people of the cities is 600 then find the total population of city A ?

1. 3300
(b) 3000
(c) 6600
(d) 3600
(e) 2500



The population of a town is 10,000. If the males increase by 5% and the females by 6% the population will be 10,540. How many females are there?

1. 4000
(b) 4500
(c) 4800
(d) 5400
(e) None



Total = 10000
Female = x
Male = (10000 − x)

$$\frac{(10000-x)5}{100}+\left(\frac{6x}{100}\right)=540$$

$$50000-5x+6x=54000$$

$$x=4000$$

In a basket there are some oranges. 33 1/2 % oranges were stolen by a thief, 30% of the remaining were rotten and rest oranges were good. If no. of good oranges was 140 then find total no. oranges in the basket.

1. 300
(b) 350
(c) 320
(d) 400
(e) 420

$$x \times \frac{2}{3} \times \frac{7}{10} = 140$$

$$x = 300$$

Rahul gets 34% of the full marks in an exam and fails by 90 marks. Rishi gets 36% of the full marks in the same exam and he also fails by 72 marks. What is the minimum percentage of marks a student should obtain to pass the exam?

1. 46 %
(b) 40 %
(c) 44 %
(d) 38 %
(e) 52 %

Rahul = 34% ⟶ −90

Rishi = 36% ⟶ −72

2% ⟶ 18

100% ⟶ 900 (Total)

Rishi = 36% + (72/9)

36% + 8% = 44%

$$\text{Passing}(\%) = \frac{(36\% \times 900) + 72}{900} = \frac{396}{900} \times 100 = 44\%$$