$\frac{1}{2}$ = 50%.
50 per century

PERCENTAGE

- KOUSTAV

CONCEPT - PERCENTAGE

50 kg → 60 kg

$\frac{10}{50} \times 100$

= +20%

50 kg → 40 kg

$\frac{10}{50} \times 100$

= −20%.

CHANGE% = $\frac{\text{New V} - \text{Old V}}{\text{Old V}} \times 100$

= $\frac{\text{Change}}{\text{Old Value}} \times 100$

1. The population of a town, named Mirzapur, is 8000. It decreases annually at the rate of 20% p. a. What will be its population after 2 years?

A) 1600 B) 4800 C) 6400 D) 5120

8000
I ↓ -20% = 1600
6400
II ↓ -20% = 1280
5120

$8000 \times \frac{80}{100} \times \frac{80}{100}$

$= 5120$

2. The population of a town, named Winterfell, increases 10% and 20% respectively in two consecutive years. The present population of the town is 13200. Then what was the population of the town 2 years ago?

A) 9504 B) 10001 C) 10000 D) 10100

x
↓ +10%
y
↓ +20%
13200
↓ -20%
y
↓ -10%
x

100
↓ +50%
150
↓ -50%
75

Let old = 100
I ↓ +10% = 10
110
II ↓ +20% = 22
132 = New

New 132 — old 100
13200 — x

$132x = 100 \times 13200$
$= 10000$

$x \times \frac{110}{100} \times \frac{120}{100} = 13200$

$x = \frac{13200 \times 10000}{110 \times 120} = 10000$

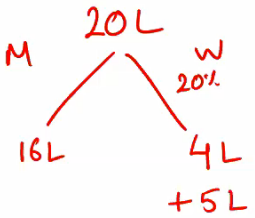
$A + B + \frac{AB}{100} = 10\% + 20\% + \frac{10 \times 20}{100}$
$= 30 + 2 = 32\%$

$x \times \frac{132}{100} = 13200$

$x = 10000$

3. A mixture of 20 litres of milk and water contains 20% of water. A new mixture is formed by adding 5 litres of water. What is the percentage of milk in the new mixture?

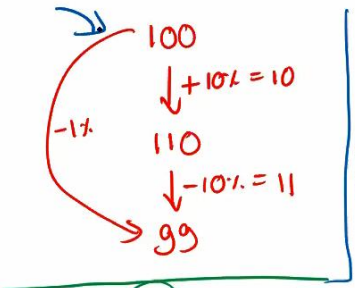
A) 36% B) 20% C) 64% D) 46%

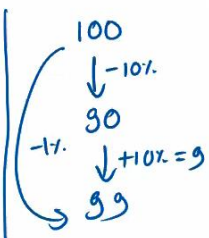


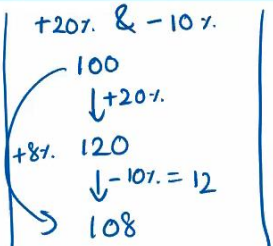
% Milk in new mix = $\frac{16}{25} \times 100 = 64\%$

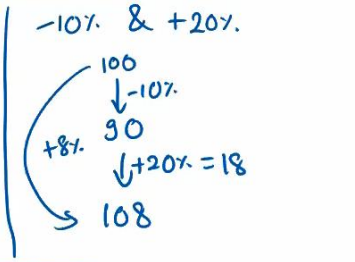
4. When a number is first increased by 10% and then reduced by 10%, the number:

A) Does not change B) Decreases by 1% C) Increases by 1% D) None of these





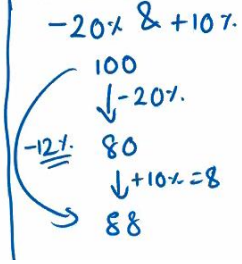




$A + B + \frac{AB}{100}$

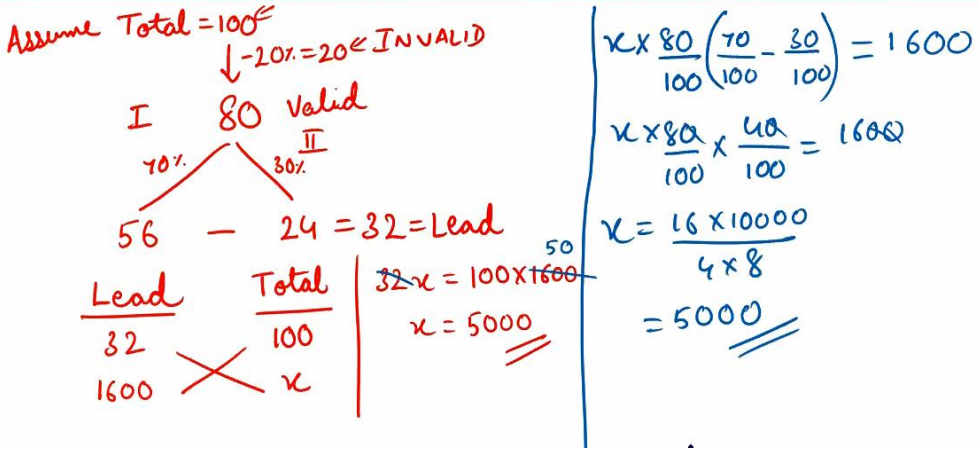
$+10 - 10 + \frac{10(-10)}{100}$

$= \frac{-100}{100} = -1$



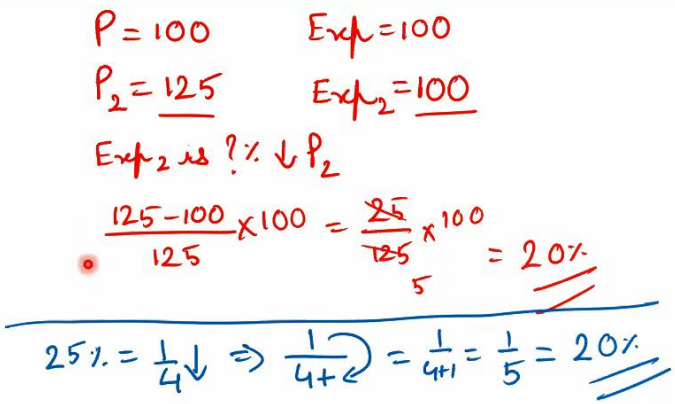
5. In an election between two candidates, 20% of votes were declared invalid. First candidate got 70% of the valid votes and a lead of 1600 votes. The total number of votes enrolled in that election was:

A) 5000 votes B) 5400 votes C) 10000 votes D) 6667 votes



6. If the price of petrol increases by 25%, by how much must Batman cut down his consumption so that his expenditure on petrol remains constant?

A) 25% B) 16.67% C) 20% D) 33.33%



7. If the price of petrol increases by 50% and Stark intends to spend only an additional 25% on petrol, by how much will he reduce the quantity of petrol purchased?

A) 25% B) 16.66% C) 50% D) 20%

$P = 100$ $Exp = 100$

$P_2 = 150$ $Exp_2 = 125$

$\frac{150-125}{150} \times 100 = \frac{25}{150} \times 100$

$= 16.66\%$

8. If X and Y are 20% and 25% greater than Z respectively, by how much percentage is X smaller than Y?

A) 20% B) 4% C) 5% D) 4.16%

$Z = 100$

$X = 120$

$Y = 125$

$\frac{125-120}{125} \times 100 = \frac{5}{125} \times 100 = 4\%$

9. In XYZ College, 65% of students are less than 20 years of age. The number of students more than 20 years of age is 2/3rd of number of students of 20 years of age, which is 42. What is the total number of students in the college?

A) 75 B) 90 C) 130 D) 200

$N_{<20} = 65\% \rightarrow N_{20} + N_{>20} = 35\%$

$N_{20} = 42 \quad N_{>20} = \frac{2}{3} \times 42 = 28$

$42 + 28 = \frac{35}{100} \times T$

$T = 70 \times \frac{100}{35} = 200$

10. Fresh grapes contain 90% water by weight while dried grapes contain 20% water by weight. What is the weight of dry grapes available from 20 kg of fresh grapes?

A) 2 kg B) 2.4 kg ✓C) 2.5 kg D) None of these

Pulp Fresh Gm = Pulp Dry Gm

10% of 20 kg = 80% of x

$x = \frac{10\% \text{ of } 20}{80\%} = \frac{20}{8} = 2.5$