Fraction	Percentage	Percentage Cindecimals
1	100%	
$\frac{1}{2}$	50%	
$\frac{1}{3}$	$33\frac{1}{3}\%$	33.33%
$\frac{1}{4}$	25%	
$\frac{1}{5}$	20%	
$\frac{1}{6}$	$16\frac{2}{3}\%$	16.66%
$\frac{1}{7}$	$14\frac{2}{7}\%$	14.28%
$\frac{1}{8}$	$12\frac{1}{2}\%$	12.5%
$\frac{1}{9}$	$11\frac{1}{9}\%$	11.11%
$\frac{1}{10}$	10%	
$\frac{1}{11}$	$\frac{1}{11}\%$	9.09%
$\frac{1}{12}$	$8\frac{1}{3}\%$	8.33%
$\frac{1}{13}$	$7\frac{9}{13}\%$	7.691%
$\frac{1}{14}$	$7\frac{1}{7}\%$	7.14%
$\frac{1}{15}$	$6\frac{2}{3}\%$	6.66%
$\frac{1}{16}$	$6\frac{1}{4}\%$	6.25%

Fraction	Percentage	Percentage in decimals
$\frac{1}{17}$	$5\frac{15}{17}\%$	5.88 %
$\frac{1}{18}$	$5\frac{5}{9}\%$	5.26 %
$\frac{1}{19}$	$5\frac{5}{19}\%$	5.26 %
$\frac{1}{20}$	5 %	
$\frac{1}{21}$	$4\frac{15}{21}\%$	4.74 %
$\frac{1}{22}$	$4\frac{6}{11}\%$	4.54 %
$\frac{1}{23}$	$4\frac{8}{23}\%$	4.34 %
$\frac{1}{24}$	$4\frac{1}{6}\%$	4.16 %
$\frac{1}{25}$	4 %	
$\frac{1}{40}$	$2\frac{1}{2}\%$	2.5 %

×

Conversion of Fraction into Percentage

$\frac{2}{3} = 2 \times \frac{1}{3} = 2 \times 33.33\% = 66.66\%$

$\frac{3}{4} = 3 \times \frac{1}{4} = 3 \times 25\% = 75\%$

$\frac{5}{6} = 1 - \frac{1}{6} = 100\% - 16.66\% = 83.33\%$

$\frac{3}{7} = 3 \times \frac{1}{7} = 3 \times 14\frac{2}{7}\% = 42\frac{6}{7}\% = 42.85\%$

$\frac{6}{7} = 1 - \frac{1}{7} = 100\% - 14\frac{2}{7}\% = 85\frac{5}{7}\% = 85.71$

$\frac{3}{8} = 3 \times \frac{1}{8} = 3 \times 12.5 = 37.5\%$

$\frac{5}{9} = 5 \times 11.11\% = 55.55\%$

$\frac{7}{11} = 7 \times 9.09 = 63.63\%$

$\frac{5}{12} = 5 \times 8\frac{1}{3}\% = 40\% + \frac{5}{3}\% = 41.66\%$

$\frac{8}{14} = 8 \times 7\frac{1}{7}\% = 56\% + \frac{8}{7}\% = 57.14\%$

$\frac{11}{15} = 11 \times 6\frac{2}{3}\% = 66\% + \frac{22}{3}\% = 73.33\%$ $1 - \frac{4}{15} =$

$100\% - 4 \times 6\frac{2}{3}\% = 100\% - 24\% - \frac{8}{3}\% = 73.33\%$

$\frac{7}{16} = 7 \times 6.25\% = 43.75\%$

$\frac{17}{9} = 2 - \frac{1}{9} = 200\% - 11.11\% = 188.89\%$

$\frac{37}{8} = 4 + \frac{5}{8} = 400\% + 62.5\% = 462.5\%$

$\frac{73}{14} = 5 + \frac{3}{14} = 500\% + 21\% + \frac{3}{7}\% = 521.42\%$

$\frac{79}{16} = 5 - \frac{1}{16} = 500\% - 6.25\% = 493.75\%$

$\frac{58}{11} = 5 + \frac{3}{11} = 500\% + 27.27\% = 527.27\%$

$\frac{41}{12} = 3 + \frac{5}{12} = 300\% + 5\left(8\frac{1}{3}\%\right) = 300\% + 40\%$

$+ \frac{5}{3}\% = 341.66\%$

$\frac{3}{12} = \frac{1}{2} \times \frac{3}{16} = \frac{1}{2} \times 18.75\% = 9.375\%$

$460\% = 400\% + 60\% = 4 + \frac{2}{5} = \frac{23}{5}$

$531.25\% = 500\% + 31.25\% = 5 + \frac{5}{16} = \frac{85}{16}$

$31.25\% \downarrow 5 \times 6.25$

$366.66\% = 300\% + 66.66\% = 3 + \frac{6}{9} = \frac{11}{3}$

$66.66\% \downarrow 2 \times 33.33\%$

$393.33\% = 400\% - 6.66\% = 4 - \frac{1}{15} = \frac{59}{15}$

$528.56\% = 500\% + 28.56\% = 5 + \frac{2}{7} = \frac{37}{7}$

Note : $x\%$ of y = $y\%$ of x

520% of $327 = (300\% + 20\% + 7\%) \times 520$

$= (3 + 0.2 + 0.07) \times 520$

$= 1560 + 104 + 36.4$

$= 1700.4$

66.28% of $25 = 25\%$ of 62.28

$= \frac{1}{4} \times 66.28 = 16.57$

Note : x is what percent of y.

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

$y \rightarrow$ Base

42 is what % of 105

Soln :- $\frac{42}{105} \times 100 = \frac{2}{5} \times 100 = 40\%$

65g. is what percentage of 2 kg

$\frac{65}{2000} \times 100 = \frac{13}{4}\%$

Note :- $\frac{n}{100}$ → Increased or decreased value
→ Orginal or intial value

Initial	final
100	100±n

45% ↑ = $+\frac{9}{20}$

Initial	Final
20	29

24% ↓ = $-\frac{6}{25}$

Initial	Final
25	19

28.56% ↑ = $\frac{2}{7}$ ↓

Initial	Final
7	5

Q1. When a number is increased by 24, it becomes 11.5% its elf, what is the number ?

Soln:- 115% = 100% + 15%
↓ orginal ↓ Increased

ATQ,
15% — 24
×29 5% — 8
100% — 160) ×20
(Ans)

Q2. If 420 is added in a number, then the number becomes 137.5% of itself, then the orginal number is :

Soln:-
37.5% — 420) ×2
×2 (75% — 480)
25% + 280) ×1/3
+1/3 (100% — 1120

37.5 = $\frac{3}{8}$ → Increased Value
→ orginal value

3 units ×140 420
8 units — 1120
(Ans)

Q3. If $16\frac{2}{3}$% of a number is subtracted from itself then the resultant number become 650, find the orginal number :

Soln:- $16\frac{2}{3}$% ↓ = $-\frac{1}{16}$

Initial	final
6	5

5 units ×130 650
6 units ×130 780
(Ans)

Q.4. If 60% of a number is 120 more than 20% of the number, then 28% of that number is less than $33\frac{1}{3}$% of the number by:

Soln:-

20% 60%

40%

ATQ, 40% = 120

100% = 300

28 $33\frac{1}{3}$%

$5\frac{1}{3}$%

$\therefore 5\frac{1}{3}$% of 300 = 16

Q.5. If decreasing 120 by x% gives the same result as increasing 40 by x%, then x% of 210 is what Percent less than (x+20)% of 180?

Soln:-

$120(100-x)\% = 40(100+x)\%$

$\Rightarrow \frac{100+x}{100-x} = \frac{120}{40} = \frac{3}{1}$

$\Rightarrow \frac{100}{x} = \frac{4}{2} = \frac{2}{1}$

$\Rightarrow x = 50\%$

50% of 210 70% of 180

105 126

$\frac{21}{126} \times 100 = 16\frac{2}{3}\%$

120 40

80

3 : 1

60 20

120 - 60 = 60

40 + 20 = 60

Q6. If 15% of (A+B) = 25% (A-B), then what percent of B is equal to A?

Soln:-

15% (A+B) = 25% (A-B) = 75%

↓ ↓

5 3

A = 4, B = 1

$\therefore \% = \frac{4}{1} \times 100$

= 400%

Q7. 10% of A's income = 15% of B's income = 20% of C's income, If Sum of their income is Rs. 7,800, then B's income is :

Soln:- 10% of A = 15% of B = 20% C = 60

A → 6, B → 4

13 units ——— 7800

4 units ——— 2400

Q8. If 60% of A = 30% B, B = 40% of C and C = n% of A, then the value of n is :

Soln:- 60% A = 30% B = 12% of C = 60

A → 1, B → 2, C → 5

$n\% = \frac{5}{1} \times 100 = 500\%$

B = 40% of C

30% of B = 30% n

40% = 12% C

Q9. 5% of a = b then b% of 20 is same as : (a) 20% $\frac{a}{2}$ (b) 50% of $\frac{a}{2}$ (c) 50% (d) 20% of $\frac{a}{20}$

Soln:- 5% of a = b

a → 20, b → 1

b% of 20 = 1% 20

= 20%

option (d) 20%

of also = 20% of $\frac{20}{20}$

= 20%.

Q10. A student multiplied a number by $\frac{3}{5}$ insted of $\frac{5}{3}$, what is the percentage error in the calculation :

Soln:- $\frac{5 \times 5}{3 \times 5} : \frac{3 \times 3}{5 \times 3} = \underbrace{25 : 9}$

$\frac{16}{25} \times 100 = 64\%$

Q11. Two numbers are 30% and 31% lesser than a third number, By how much percent is the second number to be enhanced to make is equal to the first number:

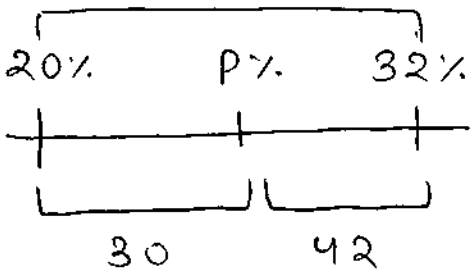
Soln:- 3rd / 100 — 1st / 70 — 2nd / 63 — 7

$\frac{7}{63} \times 100 = 11.11\%$

X

Q12. A candidate who gets 20% marks in an examination falls by 30 marks but another candidate who gets 32% gets 42 marks more that the pass mark, the pass mark is:

Soln:-



ATQ

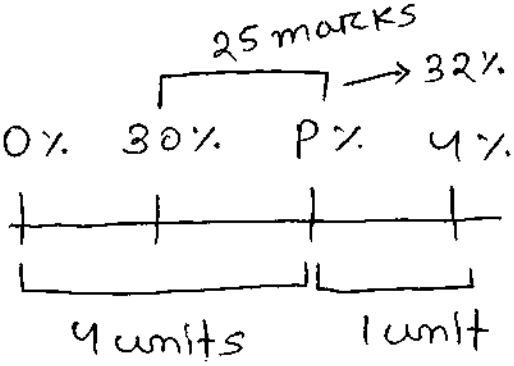
12% —— 72

20% —— 120

$+\frac{30}{150}$

X

Q13. In a test a students got 30% marks and failed by 25 marks, in the same test another student got 40% marks and secured 25% marks more than the essential minimum pass marks, The pass marks for the test were:



$25\% = \frac{1}{4}$

4 unit —— Pass mark

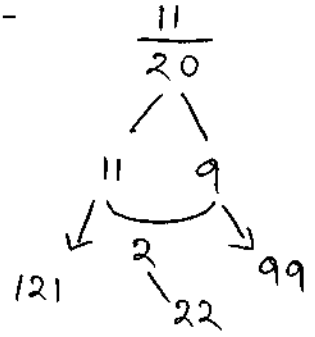
5 unit —— 40%

4 unit —— 32%

2% —— 25

(14) Two student appeared for an enamination, one of them secured 22 marks more than the other and his marks were 55% of the sum of their marks. The marks obtained by them are:

Soln:-



2 numbers are 121 and 99

---

(15) The two numbers $8\frac{1}{3}\%$ 12.5% less than the third number respectively, Find the first number is what percentage more than the second number:

Soln:-

1st	2nd	3rd
$100\% - 8\frac{1}{3}\%$	100% - 12.5%	100%
$1 - \frac{1}{12}$	$1 - \frac{1}{8}$	
$\frac{11}{12}$:	$\frac{7}{8}$	
11 :	7	

1st	2nd
22	21

$\frac{1}{21} \times 100$

$4\frac{16}{21}$

---

(16) The numerator of a fraction is increased by 20% and the denominator is decreased by 5%, the value of the new fraction $\frac{5}{2}$%. The orginal Fraction is:

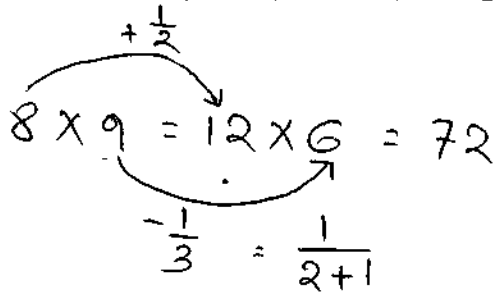
Soln:- ATQ,

$$\frac{x \times 120\%}{y \times 95\%} = \frac{5}{2} \Rightarrow \frac{x}{y} = \frac{5}{2} \times \frac{19}{24} = \frac{95}{45}$$

Product of Constancy

→ When one factor of a product is increased by $\frac{N}{D}$, then the other factor is decreased by $\frac{N}{D+N}$

→ When one factor of a product is decreased by $\frac{N}{D}$, then the other factor is decreased by $\frac{N}{D-N}$



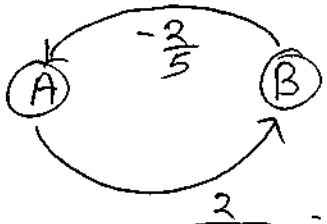
Application

A	B	C
Price	× Consumption =	Expenditure
Lenght	× Breadth =	Area
Men	× Days =	Work
Spend	× Time =	Distance

No. of visitor × Ticket Price = Revenue

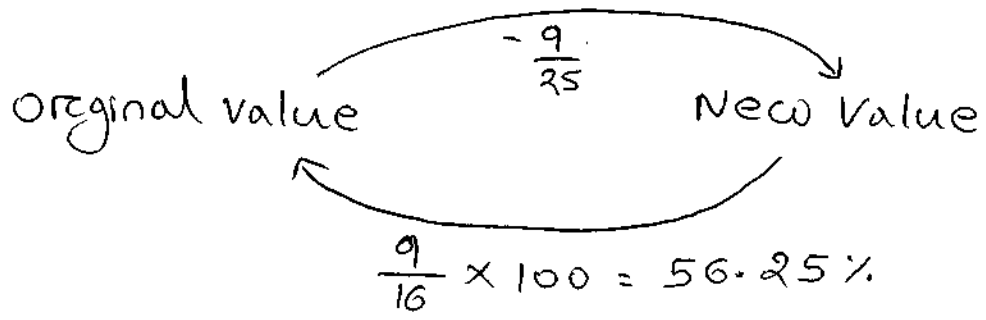
Q17. If A's income is 40% less than that of B, how much Percent B's income is more than that of A?

Soln:-



Q18. The Price of an article is cut by 36%, to restore to its orginal value, the new price much be increased by:

Soln:-



$\frac{9}{16} \times 100 = 56.25\%$

Q19. If the lenght of a rectangle is increased by 37.5% by how much percent breath should reduce to keep area constant:

Soln:- $\underline{\text{Lenght}} \times \underline{\text{breath}} = \text{Constant}$

$\frac{3}{8} \uparrow \qquad \frac{3}{11} \downarrow \qquad = 27.27\% \qquad 37.5\% = \frac{3}{8}$

Q.20. Price of sugar increased by 8%. By how much kilogram of consumption is decreased so that the expenditure of month will be same, If usual consumption is 18 k.g.

Soln:- $\underline{\text{Price}} \times \underline{\text{consumption}} = \text{expenditure (constant)}$

$\frac{2}{25} \uparrow \qquad \frac{2}{27} \times 18 \qquad = 1\frac{1}{3}\ kg.$

Q.21. A man's annual income has increased by 1.2 lakhs but tax on income that he has to pay has reduce from 12% to 10%. How now pays the same amount of tax as before what is his increased income (in lakhs)?

Soln:- $\underline{\text{Income tax}} \qquad \underline{\text{Income}}$

$\frac{1}{6} \qquad \frac{1}{5} \uparrow$ — Rs. 1.2 lakhs

1 — 6 lakhs

+ 1.2 lakhs

7.2 lakhs

Q.22. A reduction of 20% in the rate of sugar enables Sudir to get 6 kg. more sugar for Rs. 960, what is the reduced rate of sugar / kg?

Soln:-

Price	Consumption	
$\frac{1}{5}$ ↓	$\frac{1}{4}$ ↑ ——	6 kg
	1 ——	2 kg

orginal price = $\frac{960}{24}$

= 40) -20%

Reduced price = 32

Q.23. A reduction of 20% in the price of a pen enabled a trader to purchase 5 more for Rs. 320, what is the orginal price of the pen?

Soln:-

Price	Consumption	
$\frac{1}{5}$ ↓	$\frac{1}{4}$ ↑ ——	5
	1 ——	20

orginal price = $\frac{320}{20}$

= Rs. 16

Q.24. A reduction of Rs. 30 per kg enables a man to purchase 2 kg more rice for Rs. 720, find the orginal price of rice / kg.

Soln:-

Price	×	Consumption	=	Constant
30		2		
reduced price → 90		6) ×3		
		8) ×9		
(120)				
↓ orginal price				

Q.25. The price of edible oil is increased by $14\frac{2}{7}$% and consumption is decreased by 12.5% what will be the effect in the expenditure?

Soln:-

Price	×	Consumption		
7	×	8	= 56	) 0
8	×	7	= 56	)

Price	×	consumption
$\frac{1}{7}$ ↑	/	$\frac{1}{8}$ ↓

No change in expenditure

Q.26. The price of oil increased by 20%, however its Consumption decreased by $8\frac{1}{3}$%, what is the percentage increased or decreased in the expenditure in it?

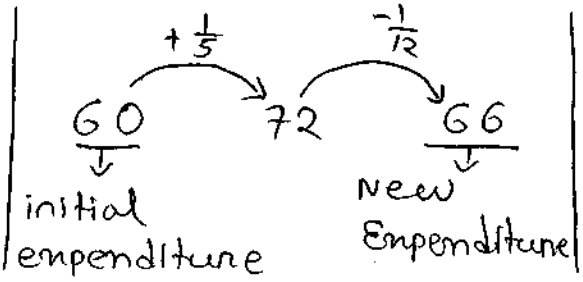
Soln:-

Price	×	Consumption		
5	×	12	= 60	) $\frac{6}{60} \times 100 = 10\%$ more
6	×	11	= 66	)

Alternatively

$\frac{1}{5}$ $\frac{1}{12}$

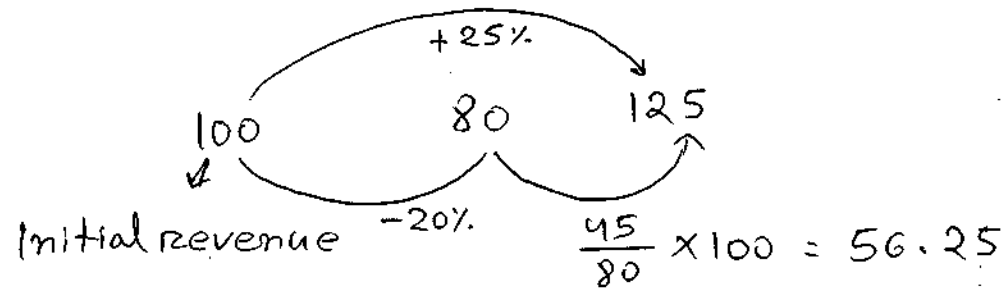
60



$\frac{6}{60} \times 100 = 10\%$

Q.27. When the price of an item was reduced by 20%, Its Sale increased by x%, If there is an increased of 25% in the receipt of revenue then the value of x is:

Soln:-



Q.28. Price of a ticket of Nandan kanan zoo is Rs. 18, When the price of ticket is reduced then the visitors is increased by 80% and the total revenue is increase by 20%. Find the cost price of the ticket after reduction.

Soln:- Note: Ticket price = Total revenue / No. of visitor

Price: $\underline{\text{Orginal}}$: $\underline{\text{New}}$

$\frac{100}{100} : \frac{120}{180} = 3 : 2$

$\downarrow \quad \downarrow$

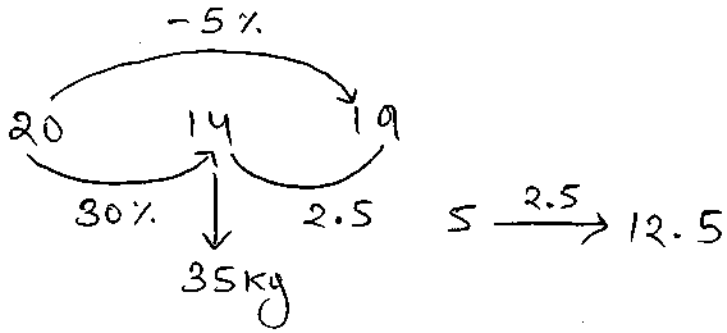
$18 \quad 12$

Q.29. The reduction of 30% in the rate of Sugar, a family uses 12.5 kg more, Therefore the expenditure decreased by 5% only. Orginal consumption of family is:

Soln:-

$\frac{3}{10} \quad \frac{1}{20}$

20



Alternative

$\frac{100}{100} : \frac{95}{70} = 14 : 19$

$\downarrow \quad 5 \longrightarrow 12.5$

$35kg$

Q.30. If the redius of the cylinderr is increased by 25% then how much percent the height must be reduced, So that the volume of the cylinderr remains Same?

Soln:- Volume of the cylinderr $= \pi r^2 h$

$(\text{Radius})^2 \times (\text{height})$

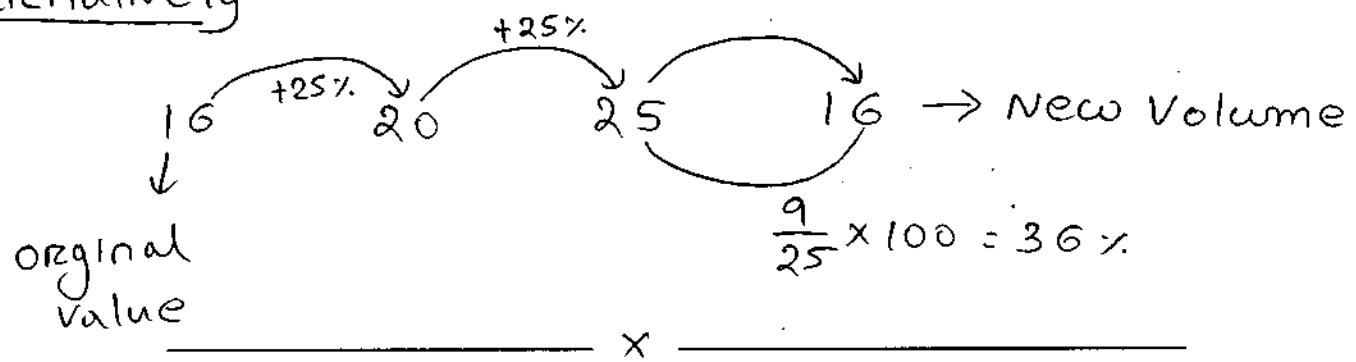
Orginal: $16 \times 25 = 400$

New: $25 \times 16 = 400$ (9)

$= \frac{9}{25} \times 100$

$= 36\%$

Alternatively



Q.31. The lenght of Cuboid is increased by 12% and its breadth is increased by 25%, By how much percent it's height decreased so that the Volume of Cuboid increased only by 4%:

Soln:-

	l	x	b	x	h	
Orginal :	25		4		1	= 100
New :	28		5		$\frac{104}{140}$	104 (+4%)

$$1 - \frac{26}{35} = \frac{9}{35} \times 100 = 25.71\%$$

Q.32. A labour works for 60 hours a week and gets Rs. 2400 as wages, If his 1 hour wages are increased by 40% and his working hours are reduced by 16.66%, then how much will his wages (in Rs.) increased or decreased?

Soln:-

Wages/hr	x	hr	=	Wages	
5	x	6	=	30	→ 2400
7	x	5	=	35	×5 → 400

Q.33. If the income tax is increased by 19%, the net income is reduced by 1%, The rate of Income tax is

Soln:-

Tax $\times \frac{1}{\text{Income}}$

Tax $\frac{19}{100}$ = Income $\times \frac{1}{100}$

$\Rightarrow \frac{\text{Tax}}{\text{Income}} = \frac{1}{19}$

Income	Tax	N.I
20	1	19

$\frac{1}{20} \times 100 = 5\%$

Q.34. A person save 25% of his income, Its income increased by 20% and his saving remains the same, then what will be the increased percentage of hrs enpenditure ?

Soln:-

Income	Enpenditure	+	Saving
100	75		25
+20% → 120	95		25

$\frac{20}{75} \times 100$

$= 26\frac{2}{3}\%$.

Q.35. A spend 65% of his income, His income is increased by 20% and her income is increased by 28%, then her Saving increased by 40%. What is the value of n?

Soln:-

Enpenditure: 25%

Saving: 20% - 9.1% = 11%

20

13 → ×0.7 → 9.1%

17 → ×0.7 → 4.9%

Enp : Saving

Income

Q.36. Radhu Saves n% of her income, If her enpenditure increased by 20% and her income increased by 28%, then her saving increased by 40%, What is the value of n?

Soln:-

Expenditure	Savings
20%	40%
28%	
12 :	8
3 :	2

$x = \frac{2}{5} \times 100 = 40\%$

Q.37. Ramesh Saves $26\frac{2}{3}\%$ of his monthy Salary, When his enpenses are increased by 20%., he is able to Save his 4080 per month, HIS monthly Salary is:

Soln:- $26\frac{2}{3}\% = \frac{4}{15}$ → Savings, → Income

Income	Exp	Savings
150	110	40
	+20% (22)	
150	132	18

ATQ

18 units ——— 4080

3 units ——— 680

150 units ——— 34,000

Q.38. The enpenses on rice, Fish and oil of a family are in the ratio 12:17:3, the price of these articles are increased by 20%, 30% and 50% respectively, the total enpenses of family on these articles are increased by:

Soln:-

Rice	Fish	Oil
12	17	3
x		
(20-30)	(30-30)	(50-30)
-120	0	60

$= -60$

$30 - \frac{60}{32} = 28\frac{1}{8}$

Q.39. A scroed 72% in a paper with a maximum marks of 900 and 80% in another paper with a minimum marks of 700, If the result is based on the combined percentage of two papers, the combined percentage is :.

Soln:-

900	700
9	7
$(\frac{72-72}{0}) + (\frac{80-72}{56})$	

$72 + \frac{56}{16} = 75.5\%$

Q.40. In an examination there were 640 boys and 360 girls, 60% of the boys 80% of the girls were successful, The percentage of failure was :

Soln:-

	Boys	Girls
	640	360
	16 :	9
failure :	40%	20%

Boys

40%

20% 20% ← Extra Compaire to girls

×16

= 320% extra is distributed among 25 Students

$20\% + \frac{320\%}{25\%} = 32.8\%$

Q.41. A student Scored 32% marks in science Subjects out of 225, How much Should he scored in language paper out of 150 if he get overall 46% marks

Soln:-

Science	language
225	150
3 :	2
(46-32)	46+42
42	2
↓ Extra	

32% 46+21 = 67%

46%

3 2

×3 ×2 7

21% 14%

Note :- He should Scored extra 42% in language Paper.

Q.42. The population of a village was 9600, If the males and females population are increased by 8% and 5%, The population will become 10,272 after 1 year. Find the number of males at present.

Soln:-

Female	Male
5%	5% + 3% (↓ Extra)

5% of 9600 = 480

3% of male population

Initial	New
9600	10,272

672 − 480 = 192 → due to 3% increased in male population

3% male population = 192

1% = 64

100% = 6400

Alternative

Male	Female
8%	5%
7%	
2	1

overall % = $\frac{672}{9600} \times 100$

= 7%

3 units ——— 9600

2 units ——— 6400

Q.43. The present population of a village (males and female) is 7640. If the number of males increased by 25% and the no. of females increased by 15%, then the population will become 9214. The difference between the present population of males and females in the village is :

Soln:-

Female	Male
15%	15% + 10%

15% of 7640 = 1146

10% of male = 428

Male = 4280

Female = 3360

Initial	New
7640	9214

1574 − 1146 = 428

Q.44 A salesman is allowed 15% comission on the total sales made by him plus bonus of 2% on sales over Rs. 8000 on a particular day total sale was 12,000 then the comission paid to salesperson on that day

Soln:-

Comission		Comission + Bonus
8000 x 15%		4000 x 17%
= 1200	+	680 = 1880

Q.45. A salesman allowed 5.5% comission on the total sales made by him plus a bonus of 0.5% on sales over Rs. 10,000, If his total earning were Rs. 1990, his total sales (in Rs.) was:

Soln:- Let total sale = x

ATQ

$$10,000 \times \frac{5.5}{100} + (x - 10,000) \times \frac{6}{100} = 1990$$

$$\Rightarrow 500 + \frac{6x}{100} - 600 = 1990$$

$$\Rightarrow \frac{6x}{100} = 9990 + 50$$

$$\Rightarrow x = \text{Rs. } 34,000$$

Alternative

upto 1000 | 10000↑

5.5% | 5.5% to 0.5%

0.5% of 10,000 = 50

6% —— 1990 + 50

= 2040

1% —— 340

100% —— 34000

Q.46. A company allowed 8% comission on the total sales made by him and a bonus of 3% on the sales over 15,000, If the salesman deposited Rs. 55630 in the company after deducting his earning from the total sales made by him, find the total sales.

Soln:- upto 15000 | 15000+

8% | 8% + 3%

3% of 15000 = 450

89% —— 55630 − 450

= 55180

100% —— $\frac{55180}{89} \times 100$

= Rs. 62,000

Q.47. A vessel contain 35l mixture of acid and water in which percentage of acid is 24, How much water should be subtracted from it so that Percentage of acid become 56%

Soln:- Quantity of acid remains same in both mixture

$\therefore$ 24% of 35 = 56% of x

$\Rightarrow x = 15$

35 − 15 = 20l

or,

24% m_1 = 56% m_2

$\Rightarrow \frac{m_1}{m_2} = \frac{56}{24} = \frac{7}{3}$) 35 (4-20l

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Q.48. A solution contains 15% of salt, from which 30kg of water is removed, the quantity of salt remains 20% in that solution, find the initial quantity of Solution.

Soln:- 15% m_1 = 20% m_2

$\Rightarrow \frac{m_1}{m_2} = \frac{20}{15} = \frac{4}{3}$) 120l (1 − 30l

---

Q.49. Fresh fruits contains 68% of water and dry fruit contains 20% of water, How much dry fruit can be obtained from 100kgs of fresh fruits?

Soln:- Here Pulp remains Constant

$$32\% \, m_1 = 80\% \, m_2$$

$$\Rightarrow \frac{m_1}{m_2} = \frac{80}{32} = \frac{5}{2} \quad \begin{matrix} \times 20 = 100 \\ \text{---} = 40 \end{matrix}$$

Q.50. Fresh fruit contains 85% of water while dry fruits contains 20% of water, How much quantity of dry fruits can be obtained out of 64 kg. of fresh fruits?

Soln:-

Fresh :	15%	80	0.8	64 kg
Dry :	80%	15	0.8	12 kg

Q.51. 45% of males and 25% of females of adult Population of a city are married, Assuming that no man married to more than one women and no woman married to more than one man, What is the percentage of married adults of total population?

Soln:-

$$45\% \text{ of } M = 25\% \text{ of } F$$

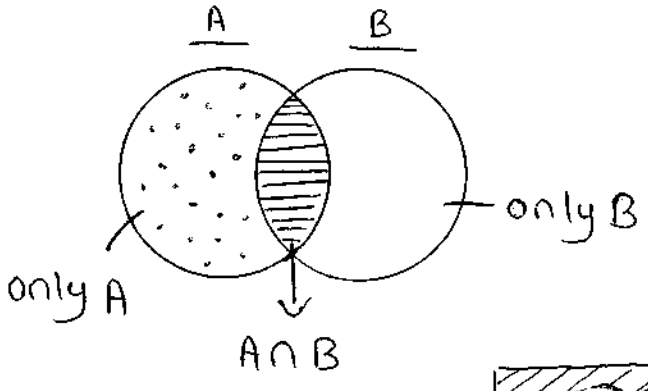
$$\Rightarrow \frac{M}{F} = \frac{25}{45} = \frac{5}{9}$$

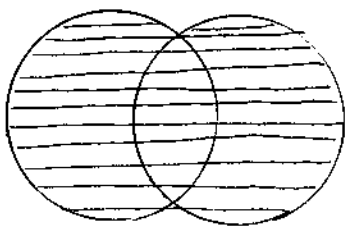
% of married adult

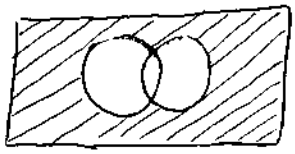
$$= \frac{2 \times 25 \text{ of } 9}{14} \times 100$$

$$= \frac{2 \times \frac{1}{4} \times 9}{14} \times 100 = \frac{9}{28} \times 100$$

$$= 32.14\%$$







Q.52. 90% of students in school passed in English, 85% Passed in mathematics and 150 student passed in both the subjects. If no student failed in both subject, find the total no. of students.

Soln:- $100\% = 90\% + 85\% - |M \cap E|$

$|M \cap E| = 75\% \longrightarrow 150$

$\Rightarrow 100\% \longrightarrow 200$

X

Q.53. In an enamination 73% of the candidates passed in quantitative aptitude test, 70% Passed in General awareness and 64% Passed in both, If 3600 failed in both Subject the total number of enaminers were:

Soln:- $|Q \cup G| = 73\% + 70\% - 64\% = 79\%$

No. of student failed in both subject

$= 100\% - 79\% = 21\%$

ATQ,

$21\% \longrightarrow 6300$

$100\% \longrightarrow 30,000$

X

Q.54. In an enamination 34% falled in mathematics and 42% falled in English. If 20% failed in both the subjects, the percentage of students who passed in both Subject was:

Soln:- $|M \cup E| = 34\% + 42\% - 20\% = 56\%$

No. of Passed student in both subject

$= 100\% - 56\% = 44\%$

Q55. In an enamination, 50% of the Student passed in odia, 55% passed in English and 40% passed in Hindi. If 15% of the students Passed in odia and English, 20% passed in English and Hindi, 25% Passed in odia and Hindi and 10% passed in there Subjects. If 40 student failed in all three Subjects Then find the number of Students.

Soln:- $|O \cup E \cup H| = 50\% + 55\% + 40\% - 15\% - 20\% - 25\% + 10\% = 95\%$

No. of failed students in three subject = $100\% - 95 = 5\%$

ATQ, $5\% \text{ —— } 40$

$100\% \text{ —— } 800$

Q.56. In a Survey of rural India, It was found that 22% do not use facebook, twitter or whatsapp 4% use all the three, there are 9% who use facebook and twitter, 11% who use twitter and whatsapp and 13% who use facebook and whatsapp If 36% use facebook and 31% use Twitter, then find the percentage of people who use whatsapp.

Soln:- $|F \cup T \cup W| = 100\% - 22\% = 78\%$

$\therefore 78\% = 36\% + 31\% + |W| - 9\% - 11\% - 13\% + 4\%$

$\Rightarrow W = 40\%$

Q.57. In an election there were only two candidates on of the candidates secured 32% of votes and is defeated by 144 votes, How many votes

did the winner gets ?

Soln:- Winner 768% | loser 32%

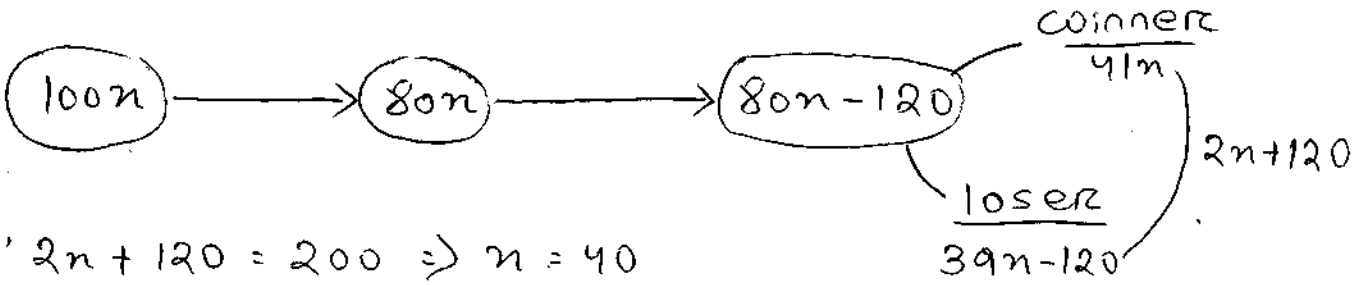
36% —— 144

1% —— 4

100% —— 400

Q.58. In an election only two candidates contested 20% of the voters did not vote and 120 votes were declared as invalid, The winner got 200 votes more than his opponents thus he secured 41% votes of the total voters on the voting list, The total no. of votes enrolled in that election was:

Soln:-

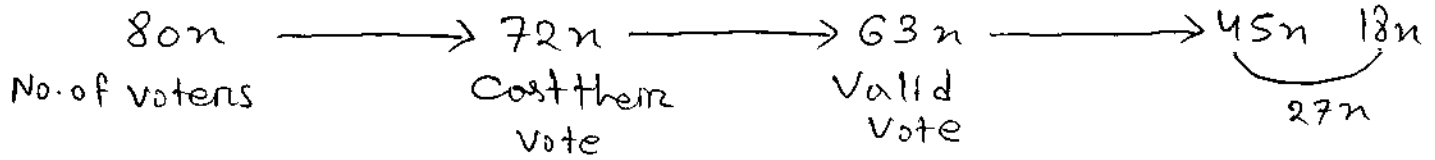


ATQ, $2n + 120 = 200 \Rightarrow n = 40$

No. of voters = $100 \times 40 = 4000$

Q.59. In an election 10% voters did not vote and 12.5% votes declare invalid and the winner gote $71\frac{3}{7}$% of valid votes and win by 54,000 votes, then the no. of voters in the voting list,

Soln:-



$\Rightarrow n = 200$

No. of voters = $80 \times 200 = 16,000$

Q.60. Bina invested 10% of her monthy income in stocks She spend 15% of remaining on groceries and gave the remaining 30,600 to her husband, what is the difference between the amount spend on groceries and the investment in stocks :

Soln:-

$\frac{1}{10}$ $\frac{3}{20}$

200

200 $\xrightarrow{-10\%}$ 180 $\xrightarrow{-15\%}$ 153 $\xrightarrow{\times 200}$ 30,600

20 — 27

20 → Stock

27 → Groceries

7 unit

$\times 200$

1400

Q.61. In a constistuency, 55% of the total number of voters are males and the rest are females, If 40% of the males are illiterate and 40% of the females are literate, then by what percentage is the number of illiterate males (Correct to 1 decimal Place)

Soln:-

100

Male: 55 $\times 40\%$ → 22

Female: 45 $\times 60\%$ → 27

22 + 27

$\frac{5}{22} \times 100 = 22.7\%$

Q.62. A certain number of students from School x appeared in an enamination and 30% students failed 150% more students than those from Schools, appeared in the same enamination from school x, If 80% of [illegible] appeared

from x and y passed then what is the percentage of students who failed from y?

Soln:-

School x	School y	School x + y
100	250	350
Pass: 70	Pass: 110	Pass: 280
Fail: 30	Fail: 40	Fail: 70

$$\frac{40}{250} \times 100 = 16\%$$

Q.63. There person's A, B and C donate 10%, 7% and 9% respectively of their monthly salaries to the charitable trust, monthly salaries of A and B is Rs. 900, If the total donation by A and B is Rs. 600 more than that of C, then what is the monthly salary (in Rs.) of C?

Soln:-

A	B	C
100x	100x	100y
-10x	-7x	-9y
90x	93x	91y

ATQ,

$10x - 7x = Rs.900$

$\Rightarrow x = Rs.300$

Again, $17x - 9y = 600$

$\Rightarrow 9y = 4500$

$\Rightarrow y = 500$

$\therefore 100y = 100 \times 500 = 50,000$