

$$\frac{37}{16} \% = \frac{37}{16 \times 100}$$

$$= \frac{37}{1600}$$

* To Convert a fraction into a percentage

i) $\frac{11}{16}$

$$\frac{11}{16} = \left[\frac{11}{16 \times 4} \times 100^{25} \right] \% = \frac{275}{4} \% = 68 \frac{3}{4} \%$$

ii) $3 \frac{2}{3}$

$$3 \frac{2}{3} = \frac{11}{3} \left[\frac{11}{3} \times 100 \right] \% = \frac{1100}{3} \% = 336 \frac{2}{3} \%$$

iii) $\frac{7}{4}$

$$\frac{7}{4} = \left[\frac{7}{4 \times 1} \times 100^{50} \right] \%$$

$$= (7 \times 50) \%$$

$$= 175 \%$$

* To Convert a percentage into a ratio

$$(i) \quad 32\%$$

$$(i) \quad 32\% = \frac{32}{100} = \frac{8}{25} = 8:25$$

$$(ii) \quad 6\frac{5}{7}\%$$

$$6\frac{5}{7}\% = \frac{47}{7}\% = \frac{4}{7 \times 100} = \frac{47}{700} = 47:700$$

$$(iii) \quad 27.5\%$$

$$27.5\% = \frac{27.5}{100} = \frac{275}{1000} = \frac{11}{40} = 11:40$$

$$(iv) \quad 175\%$$

$$175\% = \frac{175}{100} = \frac{7}{4} = 7:4$$

* To Convert a ratio into a percentage

$$(i) \quad 23:40$$

$$23:40 = \frac{23}{40} = \left[\frac{23 \times 100^5}{40} \right] \% = \frac{115}{2}\%$$

$$\frac{115}{2}\% = 57\frac{1}{2}\%$$

$$\text{ii.) } 143 : 125$$

$$\text{ii.) } 143 : 125 = \frac{143}{125} = \left[\frac{143 \times 100}{125 \times 5} \right] \% = \frac{572}{5} \%$$

$$\frac{572}{5} \% = 114 \frac{2}{5} \%$$

$$\text{iii.) } 6 \frac{2}{5} : 8 \frac{4}{15}$$

$$\frac{\left[\frac{32}{5} \right]}{\left[\frac{124}{15} \right]}$$

$$= \left[\frac{\cancel{32}^8 \times \cancel{15}^3}{\cancel{5}^1 \times 124 \times 31} \right]$$

$$\frac{24}{31} = \left[\frac{24 \times 100}{31} \right] \% = \frac{2400}{31} \% = 77 \frac{13}{31} \%$$

* To Convert a percentage into a decimal:-

$$\text{i.) } 73\%$$

$$\text{i.) } 73\% = \frac{73}{100} = 0.73$$

$$\text{ii.) } 6 \frac{2}{5} \%$$

$$\frac{6 \times 5 + 2}{5} \%$$

$$\frac{30 + 2}{5} \%$$

$$\frac{32}{5} \% = \frac{32 \times 8}{5 \times 100} = \frac{8}{125} = 0.064$$

iii) $116 \frac{2}{3} \%$

$$116 \frac{2}{3} \% = \frac{350}{3} \% = \frac{350 \times 2}{3 \times 100} = \frac{7}{6} = 1.16$$

iv) 32.5%

$$32.5 \% = \frac{325}{1000} = \frac{13}{40} = 0.325$$

* To Convert a decimal into a percentage

i) 0.37

$$0.37 = \frac{37}{100} = \left[\frac{37}{100} \times 100 \right] \% = 37\%$$

ii) 1.23

$$1.23 = \frac{123}{100} = \left[\frac{123}{100} \times 100 \right] \% = 123\%$$

iii) 0.0025

$$0.0025 = \frac{25}{10000} = \left[\frac{25}{10000} \times 100 \right] \% = \frac{25}{100} \%$$

$$\frac{25}{100} \% = 0.25 \%$$

* Find $2\frac{3}{5} \%$ of 1.4 kg

$$2\frac{3}{5} \% \text{ of } 1.4 \text{ kg}$$

$$\frac{13}{5} \% \text{ of } (1.4 \times 1000) \text{ g}$$

$$\left[\frac{13}{5} \times \frac{1}{100} \times 1400 \right] \text{ g}$$

$$= \frac{182}{5} \text{ g} = 36.4 \text{ g}$$

* If 8.5% of a number is 68 , find the number.

Let the required number be x , Then,

$$8.5 \text{ of } x = 68$$

$$\frac{8.5}{100} \times x = 68$$

$$\frac{85}{100} \times x = 68$$

$$x = \left[\frac{68 \times 100}{85} \right] = 800$$

$$x = \left[\frac{68 \times 1000}{85} \right] = 800$$

* i) what percent of 84 is 7?

i) let $x\%$ of 84 = 7

$$\frac{x}{100} \times 84 = 7$$

$$x = \left[\frac{7 \times 100}{84} \right] = \frac{25}{3} = 8\frac{1}{3}$$

Hence, $8\frac{1}{3}\%$ of 84 is 7

ii) what percent of 80 is 92?

Let $x\%$ of 80 = 92

$$\frac{x}{100} \times 80 = 92$$

$$x = \left[\frac{92 \times 100}{80} \right] = 115$$

Hence, 115% of 80 is 92.

* is what per cent of 2.8 kg is 70g?

i) Let $x\%$ of 2.8 kg = 70g

$$\frac{x}{100} \times (2.8 \times 1000)g = 70g$$

$$28x = 70$$

$$x = \frac{70}{28} = 2.5$$

2.5% of 2.8 kg is 70g.

ii.) what per cent of 4.5 litres is 90ml?

ii.) Let $x\%$ of 4.5 l = 90 ml

$$\frac{x}{100} \times (4.5 \times 1000)ml = 90ml$$

$$45x = 90$$

$$x = \frac{90}{45} = 2$$

$$x = 2$$

2% of 4.5 l is 90ml

* what per cent of 2 rupees 60 Paise is 15 paise?

Let $x\%$ of (2 rupees 60 Paise) = 15 Paise

$$\frac{x}{100} \times 260 \text{ Paise} = 15 \text{ Paise}$$

100

$$\frac{13x}{15} = 15$$

$$x = \frac{15 \times 3}{13} = \frac{75}{13} = 5 \frac{10}{13}$$

$5 \frac{10}{13}\%$ of (2 rupees 60 Paise) is 15 Paise.

* $\frac{2}{3}$ is what per cent of $\frac{4}{9}$?

$$\text{Let } x\% \text{ of } \frac{4}{9} = \frac{2}{3}$$

$$\frac{x}{100} \times \frac{4}{9} = \frac{2}{3}$$

$$\frac{x}{225} = \frac{2}{3}$$

$$x = \frac{2 \times 225}{3} = 150$$

$$x = 2 \times 75$$

$$x = 150$$

Hence, 150% of $\frac{4}{9}$ is $\frac{2}{3}$

Increasing or decreasing a Quantity by a certain per cent

Increase 360 by 15%.

$$\text{Required number} = \left[1 + \frac{15}{100} \right] \times 360$$

$$= \left[\frac{115}{100} \times 360 \right] = 414$$

Decrease 240 by 10%.

$$\text{Required number} = \left[1 - \frac{10}{100} \right] \times 240$$

$$= \left[\frac{9}{10} \times 240 \right] = 216$$

what is the number which when increased by 15% becomes 414?

Let the required number be x

$$\left[1 + \frac{15}{100} \right] x = 414$$

$$\frac{115}{100} x = 414$$

$$x = \left[\frac{414 \times 100}{115} \right] = 360$$

Hence the required number is 360.

iv.) On decreasing a number by 18% it becomes 779. Find the number.

Let the required number be x

$$\left[1 - \frac{18}{100} \right] x = 779$$

$$\frac{41x}{50} = 779$$

$$x = \left[\frac{779 \times 50}{41} \right] = 950$$

Hence, the required number is 950

11/7/2020

DATE

Percentage

Exercise 9-A

Q-1 Convert each of the following into a fraction :-

i) 68%

$$\frac{68}{100} = \frac{34}{25} = \frac{17}{25}$$

ii) $3\frac{1}{3}\%$

$$\frac{3 \times 3 + 1}{3} \%$$

$$\frac{9 + 1}{3} \%$$

$$\frac{10}{3} \%$$

$$\frac{10}{3 \times 100}$$

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

$$\frac{1}{30}$$

iii.) 224 %.

$$\frac{224}{100} = \frac{112}{50} = \frac{56}{25}$$

$$\frac{56}{25} = 2\frac{6}{25}$$

iv.) 0.05 %.

$$\frac{0.05}{100} = \frac{1}{2000}$$

$$= \frac{1}{2000}$$

$$= \frac{1}{2000}$$

Q-2 Convert each of the following into a percentage:-

i.) $\frac{2}{15}$

$$\frac{2}{15} \times 100 = \frac{200}{15} = 13\frac{1}{3}$$

$$13\frac{1}{3} \%$$

$$13\frac{1}{3} \%$$

$$\text{ii.) } \frac{9}{40}$$

$$\frac{9}{40} \times 100$$

$$\frac{9 \times 5}{2} \%$$

$$\frac{45}{2} \%$$

$$22\frac{1}{2} \%$$

$$\text{iii.) } 1\frac{2}{3} \%$$

$$\frac{3 \times 1 + 2}{3} \%$$

$$\frac{3 + 2}{3} \%$$

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

$$\frac{5}{3} \times 100$$

$$\frac{500}{3} \%$$

$$168 \frac{2}{3} \%$$

$$\text{iv.) } 2 \frac{2}{5}$$

$$\frac{2 \times 5 + 2}{5}$$

$$\frac{10 + 2}{5}$$

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

$$\frac{12}{5} \times 100 \%$$

$$12 \times 20 \%$$

$$240 \%$$

Ques 3 Express each of the following ratios as a percentage :-

$$\text{(i) } 13:20$$

$$\frac{13}{20} \times 100 \%$$

$$13 \times 5$$

ii.) 11:18

$$\frac{11}{18} \times \frac{100}{9} = 26$$

$$\frac{220}{9}$$

$$61 \frac{1}{9} \%$$

iii.) 87:25

$$\frac{87}{25} \times 100 = 348$$

$$= 87 \times 4 \%$$

$$= 348 \%$$

iv.)

$$6 \frac{1}{4} : 4 \frac{3}{8}$$

$$\frac{6 \times 4 + 1}{4} : \frac{4 \times 8 + 3}{8}$$

$$\frac{24 + 1}{4} : \frac{32 + 3}{8}$$

$$\frac{25}{4} : \frac{35}{8}$$

11/11/2023

Q.1) 11:18

$$\frac{11}{14} \times \frac{100}{100} = \frac{1100}{14}$$

$$\frac{1100}{14}$$

$$\frac{60}{8} \times \frac{100}{100}$$

Q.2) 37:25

$$\frac{37}{25} \times \frac{100}{100}$$

$$= \frac{3700}{25}$$

$$= 148$$

$$\frac{4}{5} \times \frac{3}{4}$$

$$\frac{400}{5} = \frac{1200}{5}$$

$$\frac{400}{5} = \frac{240}{4}$$

$$\frac{40}{5} = \frac{3}{4}$$

$$\frac{25}{4} \div \frac{35}{8}$$

$$\frac{25}{4} \times \frac{8}{35}$$

$$\frac{5}{2 \times 7}$$

$$\frac{5}{14} \times 100\%$$

$$\frac{5 \times 50}{7}$$

$$\frac{250}{7} \% = 142\frac{6}{7} \%$$

Q-4 Express each of the following decimals as a percentage :-

(i) 0.2

$$0.2 \times 100\%$$

$$= 2 \times 10\%$$

$$= 20\%$$

(ii) 0.5

$$\frac{0.06}{100} \times 100\%$$

$$6\%$$

iii.) 0.008

$$\frac{8}{1000} \times 100\%$$

$$= 0.8\%$$

iv.) 2.4

$$\frac{24}{100} \times 100\%$$

$$24 \times 10\%$$

$$240\%$$

Ques 5 Express each of the following percentages as a decimal :-

(i) 25%

$$\frac{25}{100}$$

$$0.25$$

(ii) 4%

$$\frac{4}{100}$$

$$0.04$$

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

$$\frac{3 \times 5 + 1}{5}$$

$$\frac{15 + 1}{5}$$

$$\frac{1684}{8 \times 100} = 2.105$$

$$\frac{4}{125}$$

$$0.032$$

iv) 0.3%

$$\frac{0.3}{10 \times 100}$$

$$\frac{3}{1000}$$

$$0.003$$

Q-6 Express each of the following as a ratio

i) 48%

$$\frac{\cancel{48} \quad \cancel{24} \quad 12}{\cancel{100} \quad \cancel{50} \quad 25}$$

$$12:25$$

ii) $26\frac{2}{3}\%$

$$\cancel{26} \times \frac{26 \times 3 + 2}{3} \%$$

$$\frac{78 + 2}{3} \%$$

$$\frac{\cancel{80} \quad 4}{3 \times \cancel{100} \quad 5}$$

$$\frac{4}{3 \times 5}$$

$$\frac{4}{15}$$

$$4:15$$

iii) 0.66%

$$\frac{6}{100} \times \frac{3}{50}$$

$$\frac{3}{100} \times 50$$

$$\frac{3}{5000}$$

$$3 : 5000$$

iv.) 120-1.

$$\frac{6}{5} \times 100$$

$$6 : 5$$

Q.7 Find the value of :-

(i) 33% of ₹ 50

$$₹ 1 = 100 P$$

$$₹ 50 P = 100 \times 5$$

$$= 500 P$$

$$\frac{33}{100} \times 500$$

$$33 \times 5 = 165 P = ₹ 16.50$$

$$\frac{6}{100} \times 100.50$$

$$\frac{3}{100} \times 50$$

$$\frac{3}{5000}$$

$$3 : 5000$$

iv.) 120%.

$$\frac{120}{100}$$

$$6 : 5$$

Q.7 Find the value of :-

(i) 33% of ₹ 50

$$₹ 1 = 100 P$$

$$₹ 50 P = 100 \times 5 \\ = 500 P$$

$$\frac{33}{100} \times 500$$

$$33 \times 5 = 165 P = ₹ 16.50$$

$$\text{ii)} \quad 6\frac{2}{3} \% \text{ of } 3\text{m}$$

$$1\text{m} = 100\text{cm}$$

$$3\text{m} = 3 \times 100\text{cm} \\ = 300\text{cm}$$

$$6\frac{2}{3} \% = \frac{6 \times 3 + 2}{3} \%$$

$$= \frac{18 + 2}{3} \%$$

$$= \frac{20}{3} \%$$

$$\frac{20}{3 \times 100} \times 300$$

$$20\text{cm}$$

$$\text{iii)} \quad 0.6 \% \text{ of } 35\text{kg}$$

$$1\text{kg} = 1000\text{gm}$$

$$35\text{kg} = 1000 \times 35\text{gm} \\ = 35000\text{gm}$$

$$\frac{0.6}{10 \times 100}$$

$$\frac{6}{10 \times 100} \times 35000$$

$$35 \times 6$$

$$210 \text{ g}$$

iv) $3\frac{1}{4}\%$ of 5l

$$1 \text{ l} = 1000 \text{ ml}$$

$$5 \text{ l} = 1000 \times 5 \text{ ml} \\ = 5000 \text{ ml}$$

$$3\frac{1}{4}\% = \frac{3 \times 4 + 1}{4}\%$$

$$= \frac{12 + 1}{4}\%$$

$$= \frac{13}{4}\%$$

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

$$= \frac{13}{24} \times 5000$$

$$= \frac{325}{2} \times 162.5 = 162.5 \text{ ml}$$

Q8) what per cent of ₹9 is ₹5?

Let $x\%$ of ₹9 = ₹5

$$\frac{x}{100} \times ₹9 = ₹5$$

$$x = \left[\frac{₹5 \times 100}{₹9} \right]$$

$$x = \left[\frac{500}{9} \right] = 55 \frac{5}{9} \%$$

ii) what per cent of 32m is 80m?

Let $x\%$ of 32m = 80m

$$\frac{x}{100} \times 32m = 80m$$

$$x = \frac{80m}{32m} \times \frac{100}{1}$$

$$= 10 \times 25\%$$

$$= 250\%$$

iii) what per cent of 50kg is 65kg?

Let $x\%$ of 50kg = 65kg

$$\frac{x}{100} \times 50kg = 65kg$$

Q.1) what per cent of ₹9 is ₹5?

Let $x\%$ of ₹9 = ₹5

$$\frac{x}{100} \times ₹9 = ₹5$$

$$x = \left[\frac{₹5 \times 100}{₹9} \right]$$

$$x = \left[\frac{500}{9} \right] = 55 \frac{5}{9} \%$$

ii) what per cent of 32m is 80m?

Let $x\%$ of 32m = 80m

$$\frac{x}{100} \times 32m = 80m$$

$$x = \frac{80m}{32m} \times \frac{100}{1} = 250\%$$

$$= 10 \times 25\%$$

$$= 250\%$$

iii) what per cent of 50kg is 65kg?

Let $x\%$ of 50kg = 65kg

$$\frac{x}{100} \times 50kg = 65kg$$

$$x = 65 \text{ Kg} \times \frac{2}{100}$$

$$x = 65 \times 2$$

$$x = 130\%$$

iv.) what per cent of 5 litres is 400ml?

iv.) Let $x\%$ of 5l = 400ml

$$1\text{l} = 1000\text{ml}$$

$$5\text{l} = 1000 \times 5\text{ml}$$

$$= 5000\text{ml}$$

$$\frac{x}{100} \times 5000 = 400\text{ml}$$

$$x = \frac{400}{5000} \times \frac{100}{1}$$

$$x = 8\%$$

Ques-9

(i) If 8% of a number is 24, find the number.

$$(ii) 8\% \text{ of } x = 24$$

$$\frac{8}{100} \times x = 24$$

$$\frac{8}{100} \times x = 24$$

$$x = \frac{24}{\frac{8}{100}} \times \frac{100}{81}$$

$$x = 3 \times 100$$

$$x = 300$$

ii.) If 7.25% of a number is 2.9, find the number.

$$\text{ii.) } 7.25\% \text{ of } x = 2.9$$

$$\frac{7.25}{100 \times 100} \times x = 2.9$$

$$\frac{725}{100 \times 100} \times x = 2.9$$

$$x = \frac{2.9}{\frac{725}{100 \times 100}} \times \frac{100 \times 100}{725}$$

$$x = 20 \times 2$$

$$x = 40$$

iii.) If $6\frac{2}{3}\%$ of a number is 1, find the number.

iii) ~~Let~~ $6\frac{2}{3}\%$ of $x = 1$

$$\frac{20}{3}\% \times x = 1$$

$$\frac{20}{3 \times 100} \times x = 1$$

$$x = 1 \times \frac{3 \times 100}{20}$$

$$x = 1 \times 3 \times 5$$

$$x = 15$$

Answers

(i) Increase 75 by 24%.

$$\text{Required number} = \left[1 + \frac{24}{100} \right] \times 75$$

$$= \frac{124}{100} \times 75$$

$$= 31 \times 3$$

$$= 93$$

ii) Decrease 375 by 8%.

$$\text{Required number} = \left(1 - \frac{8}{100} \right) \times 375$$

$$= \left(\frac{100-8}{100} \right) \times 375$$

$$= \left(\frac{92}{100} \right) \times 375$$

$$= \frac{92}{100} \times 375 \quad \begin{matrix} 4 \times 23 \\ 75 \times 15 \end{matrix}$$

$$= 23 \times 15$$

$$= 345$$

Ques 11/ what number when increased by 15% becomes 276?

Let the required number be x

$$\text{Then, } \left[\frac{1+15}{100} \right] x = 276$$

$$\frac{115}{100} x = 276$$

$$x = 276 \times \frac{100}{115} \quad \begin{matrix} 20 \\ 23 \end{matrix}$$

$$= 12 \times 20$$

$$= 240$$

Ques 12/ what number when decreased by 8% becomes 345?

Let the required number be x

$$\left[1 - \frac{8}{100} \right] x = 345$$

$$\frac{92x}{100} = 345$$

$$x = \frac{345 \times 100}{92} = 375$$

$$x = 15 \times 25$$

$$x = 375$$

5/7/2020

Exercise 6-B

Word Problems:-

1) 36% of the students in a school are girls. If the number of boys is 1440, find the total strength of the school.

$$\text{Number of boys} = 1440$$

$$\text{Number of girls} = 36\%$$

$$\text{Boys} = 100\% - 36\% = 64\%$$

Let strength of school be x

$$64\% \text{ of } x = 1440$$

$$\frac{64}{100} \times x = 1440$$

$$\frac{64x}{100} = 1440$$

$$x = \frac{1440 \times 100}{64} = 2250$$

$$x = 45 \times 50$$

$$x = 2250$$

Example: saves 18% of his monthly salary.
If he spends ₹ 10250 per month,
what is his monthly salary?

Saved Salary = 18%.

Spent Salary = ₹ 10250

Expenditure = 100% - 18%
= 82%.

Let monthly salary be x

72% of $x = 10250$

72 of $x = 10250$

100

72 $x = 10250$

100

$x = \frac{10250 \times 100}{72}$ 50

82 441

$x = 250 \times 50$

= 12500

3) In an examination, a student has to secure
40% marks to pass. Rahul gets 178 marks
and fails by 32 marks. What are the
marks?

2.) Greta saves 18% of her monthly salary. If she spends ₹ 10250 per month, what is her monthly salary?

2.) Saved Salary = 18%

Spent Salary = ₹ 10250

Expenditure = 100% - 18%
= 82%

Let monthly salary be x

72% of $x = 10250$

$\frac{72}{100}$ of $x = 10250$

$\frac{72}{100} x = 10250$

$x = \frac{10250 \times 100}{72}$

$x = 250 \times 50$

$= 12500$

3.) In an examination, a student has to secure 40% marks to pass. Rahul gets 178 marks and fails by 32 marks. What are the maximum marks?

Passing Percentage = 40%

Rahul marks = 178

Fail marks = 32

Let total marks be x

Passing marks $\frac{40}{100} \times x = 0.4x$

$$0.4x = 178 + 32$$

$$0.4x = 210$$

$$x = \frac{210}{0.4} = \frac{2100}{4} = 525$$

4) 8% of the students in a school remained absent on a day. If 1633 attended the school on that day, how many remained absent?

Percentage of absent students = 8%

No. of students attended = 1633
school on that day

No of absences = 100% - 8%
= 92%

92% of $x = 1633$

$$x = \frac{1033}{92} \times \frac{100}{46} \text{ So } 25$$

$$= 142$$

5.) on increasing the price of an article by 14%, it becomes ₹1995. what was its original price?

let the original price of an article be x

Increase in price = 14%

$$\text{Increased price} = ₹ \left[\frac{114}{100} \right] x = \frac{114x}{100}$$

But ~~is~~ increased price = ₹1995

$$\therefore \frac{114x}{100} = ₹1995$$

$$x = \left[\frac{1995 \times 100}{114} \text{ So } 665 \right]$$

$$= \frac{33250}{29} \text{ 1750}$$

$$= ₹1750$$

Ques. 6.) on decreasing the price of an article by 6% it becomes ₹1551. what was its original price?

Let the original price of an article be x

Decrease in price = 6%

$$\text{Decreased Price} = ₹ \left[\frac{100 - 6}{100} \right]$$

$$= ₹ \left[\frac{94}{100} \right]$$

But decreased price = ₹ 1551

$$\therefore \frac{94x}{100} = 1551$$

$$94x = 1551 \times 100$$

$$94x = 155100$$

$$x = \frac{155100}{94} \text{ Rs}$$

$$x = ₹ 1650$$

7.) Renee reduced her weight by 15%. If now she weighs 52.7 Kg, what was her earlier weight?

Percentage of reduced weight = 15%

New weight = 52.7 Kg

$$\text{old weight} = 100\% - 15\%$$

$$= 85\%$$

$$85\% \text{ of } x = 52.7$$

$$\frac{85}{100} \times x = 52.7$$

$$x = \frac{52.7 \times 100}{85}$$

$$x = 31 \times 2$$

$$= 62 \text{ Kg}$$

→ Two Candidates Contested an election. One of them secured 58% votes and won the election by a margin of 2506 votes. How many votes were polled in all?

Let total votes polled be x

$$x = \frac{2506 \times 100}{58 - 29}$$

one of them secured ~~second~~ votes = 58%

other secured votes = 100% - 58%

$$= 42\%$$

$$58\% \text{ of } x - 42\% \text{ of } x = 2560$$

$$\frac{58}{100} \times x - \frac{42}{100} \times x = 2560$$

$$\frac{58x - 42x}{100} = 2560$$

$$\frac{16x}{100} = 2560$$

$$16x = 2560 \times 100$$

$$x = \frac{2560 \times 100}{16}$$

$$x = 16000$$

In an examination, Pruti scored 60 out of 75 in science, 84 out of 100 in mathematics, 36 out of 50 in Hindi and 30 out of 45 in English.

- (i) In which Subject her performance is worst?
- (ii) In which Subject her performance is the best?
- (iii) What is her aggregate percentage of marks?

$$\text{Percentage of marks in science} = \frac{60}{75} \times 100\%$$

$$= 4 \times 20\%$$

$$= 80\%$$

$$\text{Percentage of marks in mathematics} = \frac{84}{100} \times 100\%$$

$$= 84\%$$

$$\text{Percentage of marks in Hindi} = \frac{36}{50} \times 100\%$$

$$= 36 \times 2\%$$

$$= 72\%$$

$$\text{Percentage of marks in English} = \frac{300}{480} \times 100\%$$

$$= \frac{200}{3}\%$$

$$= 66\frac{2}{3}\% \text{ or } 66.6\%$$

$$\text{Average percentage} = \frac{80\% + 84\% + 72\% + 66.6\%}{4}$$

$$= \frac{302.6}{4}\%$$

$$= 75.65\%$$

10.) The price of an article is increased by 25%. By how much per cent must this new value be decreased to restore it to its former value?

Let the original number be x

$$\text{Increased number} = \left[1 + \frac{26}{100} \right] x$$

$$= \frac{126x}{100}$$

$$= \frac{5x}{4}$$

To restore its former value reduction
 sta required = $\frac{5x - x}{4}$

$$= \frac{4x - 4x}{4}$$

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

Percentage reduction = $\left[\frac{x}{\frac{5x}{4}} \right] \times 100\%$

$$= \left[\frac{4x}{5x} \right] \times 100\%$$

$$= 80\%$$

Q. The price of an article is reduced by 10%. By how per cent must this new value be increased to restore it to its former value?

Let the original price be x

$$\text{Reduced Price} = \left[1 - \frac{10}{100} \right] x$$

$$= \frac{90}{100} x$$

$$= \frac{9}{10} x$$

To restore its former value

$$\text{Increase required} = \frac{x - \frac{9}{10}x}{10}$$

$$= \frac{10x - 9x}{10}$$

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

$$\text{Percentage Increase} = \left[\frac{\frac{x}{10}}{\frac{9x}{10}} \right] \times 100\%$$

$$= \frac{x}{10} \times \frac{10}{9} \times 100\%$$

$$= \frac{100}{9} \%$$

$$= 11 \frac{1}{9} \%$$

The price of tea is increased by 20%.
 How much per cent this ~~value~~ ^{value} increased to so that a housewife should reduce the consumption of tea so as not to increase the expenditure on tea?

Let the original price be ₹ x

$$\text{Increased Price} = \left[\frac{1 + 20}{100} \right] x$$

$$= \frac{120}{100} x$$

$$= \frac{6x}{5}$$

$$\text{Reduction Required} = \frac{6x}{5} - x$$

$$= \frac{6x - 5x}{5}$$

$$\text{Percentage reduction} = \left[\frac{\frac{x}{5}}{\frac{x}{5}} \right] \times 100\%$$

$$= \frac{x}{5} \times \frac{5}{6x} \times 100\%$$

$$= \frac{50}{3}\% = 16\frac{2}{3}\%$$

13) A man gave 35% of his money to his elder son and 40% of the remainder to the younger son. Now, he is left with ₹ 1750. How much money he had?

Let he had money = ₹ x

Elder son share's = 35% of x

$$= \frac{35}{100} \times x$$

$$= \frac{7x}{20}$$

Remaining money = $x - \frac{7x}{20}$

$$= \frac{20x - 7x}{20}$$

$$= \frac{13x}{20}$$

$$\text{Younger son share} = 40\% \text{ of } \frac{13x}{20}$$

$$= \frac{40}{100} \times \frac{13x}{20}$$

$$= \frac{13x}{50}$$

$$\text{Money left with him} = \frac{13x}{20} - \frac{13x}{50}$$

$$= \frac{13x \times 5 - 13x \times 2}{100}$$

$$= \frac{65x - 26x}{100}$$

$$= \frac{39x}{100}$$

$$\frac{39x}{100} = 11700$$

$$x = \frac{11700 \times 100}{39}$$

$$= 30000$$

123) 5% of the population of a town were killed in an earthquake and 8% of the remainder left the town. If the population of the town now is 43700, what was its population at the beginning?

Let the total population in the start be x

$$\text{Died in earthquake} = \frac{5x}{100} = \frac{5x}{20}$$

$$\text{Remaining} = x - \frac{5x}{100} = \frac{x - x}{20}$$

$$= \frac{19x}{20}$$

$$\text{left the town} = \frac{8}{100} \times \frac{19x}{20} = \frac{8}{50} \times \frac{19x}{20}$$

$$= \frac{19x}{250}$$

$$\text{Now remaining in town} = \frac{19x}{20} - \frac{19x}{250}$$

$$= \frac{19x}{250}$$

$$= \frac{495x - 39x}{500}$$

$$= \frac{437x}{50}$$

$$\therefore \frac{437x}{500} = 43700$$

$$x = \frac{43700 \times 500}{437}$$

$$x = 50,000$$