Introduction

Concept of percentage is similar to ratios and fractions.

In simple terms, percentage means 'out of one hundred'. We denote it as %

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

% means hundredths.

Examples:

Example 1- Express each of the following as a fraction:

(a) 36%

Solution: $36\% = \frac{36}{100} = \frac{18}{50} = \frac{9}{25}$

(b) 120%

Solution: $120\% = \frac{120}{100} = \frac{6}{5} = 1\frac{1}{5}$

(c) 0.8%

Solution: $0.8\% = \frac{0.8}{100} = \frac{8}{1000} = \frac{4}{500} = \frac{2}{250} = \frac{1}{125}$

Example 2 – Express each of the following as a decimal:

(a) 80%

Solution: $80\% = \frac{80}{100} = \frac{4}{5} = 0.8$

(b) 8%

Solution: $8\% = \frac{8}{100} = \frac{2}{25} = 0.08$

(c) 205%

Solution: $205\% = \frac{205}{100} = 2.05$

Example 3 – Express each of the following fractions as a percentage:

(a) $\frac{7}{25}$

Solution: $\left(\frac{7}{25} \times 100\right)\% = 28\%$

(b) $\frac{5}{8}$

Solution: $\left(\frac{5}{8} \times 100\right)\% = \frac{500}{8}\% = \frac{125}{2}\% = 62\frac{1}{2}\%$

(c) $\frac{11}{6}$

Solution: $\left(\frac{11}{6} \times 100\right)\% = \left(\frac{1100}{6}\right)\% = \frac{550}{3}\% = 183\frac{1}{3}\%$

Example 4 – Convert the ratio 3: 4 to percentage.

Solution: Ratio = $\frac{3}{4}$

We have to convert this ratio into percentage

=> $\left(\frac{3}{4} \times 100\right)\% = \frac{300}{4}\% = 75\%$

Example 5 – Express 36% as a ratio.

Solution: 36%

$$36\% = \frac{36}{100} = \frac{9}{25}$$

Thus, ratio = $9: 25$

Example 6 – Which is largest in $16\frac{2}{3}\%, \frac{2}{15}, and\ 0.12$**?**

Solution: We are given with three numbers $16\frac{2}{3}\%, \frac{2}{15}\ and\ 0.12$

We have to find the largest number among them.

First number = $16\frac{2}{3}\% = \frac{50}{3}\% = \frac{50}{3} \times \frac{1}{100} = \frac{1}{6} = 0.166$ ...

Second number = $\frac{2}{15} = 0.133$..

Third number = 0.12

Largest number is 0.166..

Thus, $16\frac{2}{3}\%$ is the largest among three numbers.

Example 7 – (a) What per cent of 120 is 90?

(b) What per cent of 1 kg is 5 g?

(c) What per cent of 3.5 L is 150mL?

Solution: (a) Required percentage = $\left(\frac{90}{120} \times 100\right)\% = 75\%$

(b) Since $1kg = 1000g$

Required percentage = $\left(\frac{5}{1000} \times 100\right)\% = 0.5\%$

(c) Since $1l = 1000ml$

Required percentage = $\left(\frac{150}{3500} \times 100\right)\% = \frac{30}{7}\% = 4\frac{2}{7}\%$

Example 8: Find $7\frac{1}{2}\%$ of Rs 2400

Solution: $7\frac{1}{2}\% \times Rs2400$

=> $\frac{15}{2} \times \frac{1}{100} \times 2400 = Rs180$

Example 9 – If 26% of a number is 65, find the number.

Solution: Let a number be x

Then, according to given question,

$26\% \times x = 65$

=> $\frac{26}{100} \times x = 65$

=> $x = \frac{65 \times 100}{26} = 250$

Example 10: Sarita spends 65% of her salary and the rest she saves. If she saves Rs 2940 per month, what is her monthly salary?

Solution: Let the monthly salary of sarita be $Rs\ x$

Expenditure of sarita = $65\% \times x = \frac{65}{100}x = Rs\frac{13x}{20}$

Savings of sarita = $Rs\left(x - \frac{13x}{20}\right) = Rs\frac{7x}{20}$

Savings = $Rs2940$

=> $\frac{7x}{20} = 2940$

=> $x = \frac{2940 \times 20}{7} = 420 \times 20 = 8400$

Thus, monthly salary of sarita = $Rs8400$

Example 11: In a class, the girls are 60% of the total number of students and the boys are 18 in number. How many students are there in the class?

Solution: Let total number of students in the class be x

Percentage of girls =60%

Thus, percentage of boys = 40%

Number of boys = 18

=> $40\% \times x = 18$

=> $\frac{40x}{100} = 18$

=> $\frac{2x}{5} = 18$

=> $x = \frac{18 \times 5}{2} = 45$

Therefore, total number of students in the class is 45

Example 12: A number is increased by 20% and then decreased by 20%. Find the net increase or decrease per cent?

Solution: Let the number be x

When number is increased by 20%,

New number = $120\% \times x = \frac{120x}{100} = \frac{6x}{5}$

Then, resulting number is decreased by 20%

New number = $80\% \times \frac{6x}{5} = \frac{80}{100} \times \frac{6x}{5} = \frac{24x}{25}$

Thus, net decrease = $x - \frac{24x}{25} = \frac{x}{25}$

Net decrease percentage = $\left(\frac{x}{25} \times \frac{1}{x} \times 100\right)\% = 4\%$

Example 13: In an examination, one requires 40% marks to pass. Rahul gets 185 marks and fails by 15 marks. What are the maximum marks?

Solution: Let the maximum marks be x

Marks obtained by Rahul = 185

But he fails by 15 marks

So, passing marks = $185 + 15 = 200$

And passing percentage = 40%

=> $40\% \times x = 200$

=>$\frac{40}{100} \times x = 200$

=> $x = \frac{200 \times 100}{40} = 500$

Therefore, maximum marks = 500

Example 14: Out of her total monthly salary, Tanvy spends 30% on house rent and 60% of the rest on household expenditure. If she saves Rs 10500, what is her total monthly salary?

Solution: Let the total monthly salary of tanvi be $Rs\ x$

Money spent on house rent = $30\% \times x = \frac{30x}{100} = \frac{3x}{10}$

Remaining money = $x - \frac{3x}{10} = \frac{7x}{10}$

Money spent on household expenses = $60\% \times \frac{7x}{10} = \frac{60}{100} \times \frac{7x}{10} = \frac{21x}{50}$

Her savings = $\frac{7x}{10} - \frac{21x}{50}$

= $\frac{35x - 21x}{50} = \frac{14x}{50} = \frac{7x}{25}$

Now, savings are given to be 10500

=> $\frac{7x}{25} = 10500$

=> $x = \frac{10500 \times 25}{7} = 1500 \times 25 = 37500$

Therefore, monthly income of tanvi = $Rs\ 37500$

Example 15: The price of sugar goes up by 20%. By how much per cent must a housewife reduce her consumption of sugar so that the expenditure on sugar remains the same?

Solution: Let us assume the consumption of sugar be 1 unit

And let the cost of 1 unit of sugar be $Rs100$

Now, if the price goes up by 20%

New cost of 1 unit = $Rs\ 120$

Since, $Rs\ 120$ = Cost of 1 unit

Then, $Rs\ 1$= Cost of $\frac{1}{120}$ unit

$Rs\ 100$ = Cost of $\frac{1}{120} \times 100 = \frac{5}{6}$ units

Thus, cost of $\frac{5}{6}$ units of sugar = $Rs\ 100$

Reduction in consumption = $1 - \frac{5}{6} = \frac{1}{6}$

Percentage of reduction in consumption = $\left(\frac{1}{6} \times \frac{1}{1} \times 100\right)\% = \frac{50}{3}\% = 16\frac{2}{3}\%$

Example 16: The population of a town increases by 6% annually. If the present population is 17490, what was it a year ago?

Solution: Let the population of town a year ago be x

It is given that population of a town increase by 6% annually

Thus, present population = $106\% \times x = \frac{106x}{100} = \frac{53x}{50}$

Present population is given to be 17490

=> $\frac{53x}{50} = 17490$

=> $x = \frac{17490 \times 50}{53} = 330 \times 50 = 16500$

Therefore, population a year ago was 16500

Example 17: The value of a machine depreciates every year by 10%. If the present value of the machine be Rs 99000, what was its value last year?

Solution: Let value of machine last year be $Rs\ x$

It is given that value depreciates by 10% every year

Thus, present value of machine = $90\% \times x = \frac{90x}{100} = \frac{9x}{10}$

Also, present value of machine is given to be $Rs\ 99000$

=> $\frac{9x}{10} = 99000$

=> $x = \frac{99000 \times 10}{9} = 110000$

Therefore, value of machine last year was $Rs\ 110000$

Example 18: A's income is 60% more than that of B. By what per cent is B's income less than A's?

Solution: Let the income of B be $Rs\ 100$

Given that income of A is 60% more than B

Thus, income of A = $Rs160$

Now, if income of A is Rs160, then income of B = Rs100

If income of A is Rs1, then income of B = $\frac{100}{160}$

If income of A is Rs100, then income of B = $\frac{100 \times 100}{160} = Rs62.5$

Thus, B's income is less than A's income by $(100 - 62.5) = 37.5\%$

Exercise 9A

Question 1: Express each of the following as a fraction:

(a) $\mathbf{48}\% = \frac{48}{100} = \frac{12}{25}$

(b) $\mathbf{220}\% = \frac{220}{100} = \frac{11}{5} = 1\frac{2}{5}$

(c) $\mathbf{2.5}\% = \frac{2.5}{100} = \frac{25}{1000} = \frac{1}{40}$

Question 2: Express each of the following as a decimal:

(a) $\mathbf{6}\% = \frac{6}{100} = 0.06$

(b) $\mathbf{72}\% = \frac{72}{100} = 0.72$

(c) $\mathbf{125}\% = \frac{125}{100} = 1.25$

Question 3: Express each of the following as a percentage:

(a) $\frac{9}{25}$

Solution: $(\frac{9}{25} \times 100)\% = 36\%$

(b) $\frac{3}{125}$

Solution: $\left(\frac{3}{125} \times 100\right)\% = \frac{300}{125}\% = \frac{12}{5}\% = 2.4\%$

(c) $\frac{12}{5}$

Solution: $(\frac{12}{5} \times 100)\% = 240\%$

Question 4: Convert the ratio 4:5 to percentage.

Solution: Ratio = $4:5$

We have to convert this ratio into percentage:

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

Question 5: Express 125% as a ratio.

Solution: 125%

$\frac{125}{100} = \frac{25}{20} = \frac{5}{4}$

Thus, Ratio = $5:4$

Question 6: Which is largest in $6\frac{2}{3}\%, \frac{3}{20}$ *and* 0.14?

Solution: We are given with three numbers $6\frac{2}{3}\%, \frac{3}{20}$ *and* 0.14

We have to find the largest number among them.

First number = $6\frac{2}{3}\% = \frac{20}{3}\% = \frac{20}{3} \times \frac{1}{100} = \frac{1}{15} = 0.066 \ldots$

Second number = $\frac{3}{20} = 0.15$

Third number = 0.14

Largest number is 0.15

Thus $\frac{3}{20}$ is the largest among three numbers

Question 7: (a) What per cent of 150 is 96?

(b) What per cent of 5 kg is 200 g?

(c) What per cent of 2 litres is 250 mL?

Solution: (a) $\left(\frac{96}{150} \times 100\right)\% = \frac{960}{15}\% = 64\%$

(b) Since 1kg = 1000g

$\left(\frac{200}{5000} \times 100\right)\% = 4\%$

(c) Since $1l$ = 1000 ml

$\left(\frac{250}{2000} \times 100\right)\% = 12.5\%$

Question 8: Find $4\frac{1}{2}\%$ of Rs 3600

Solution: $4\frac{1}{2}\% \times 3600$

$= \frac{9}{2}\% \times 3600 = \frac{9}{2} \times \frac{1}{100} \times 3600 = 162$

Question 9: If 16% of a number is 72, find the number.

Solution: Let a number be x

According to given question,

$16\% \times x = 72$

$\Rightarrow \frac{16x}{100} = 72$

$\Rightarrow x = \frac{72 \times 100}{16} = \frac{7200}{16} = 450$

Question 10: A man saves 18% of his monthly income. If he saves Rs 3780 per month, what is his monthly income?

Solution: Let monthly income of man be $Rs\ x$

Given that $18\% \times x = 3780$

$\Rightarrow \frac{18x}{100} = 3780$

=> $x = \frac{3780 \times 100}{18} = 210 \times 100 = 21000$

Thus, the monthly income of man = $Rs\ 21000$

Question 11: A football team wins 7 games, which is 35% of the total games played. How many games were played in all?

Solution: Let total games played be x

Winning games = 7

According to given question,

=> $35\% \times x = 7$

=> $\frac{35x}{100} = 7$

=> $x = \frac{700}{35} = 20$

Thus, total football games played were 20

Question 12: Amit was given an increment of 20% on his salary. If his new salary is Rs 30600, what was his salary before the increment?

Solution: Let the salary of amit before the increment be $Rs\ x$

Increment = 20%

=> New salary = $120\% \times x$

Also, new salary is given to be $Rs\ 30600$

=> $120\% \times x = 30600$

$$=> \frac{120x}{100} = 30600$$

=> $x = \frac{30600 \times 100}{120} = 5100 \times 5 = 25500$

Thus, the salary before increment was $Rs\ 25500$

Question 13: Sonal attended her school on 204 days in a full year. If her attendance is 85%, find the number of days on which the school was opened.

Solution: Let the number of days on which school was opened be x days

Number of days sonal attended school = 204 days

Here, attendance = $85\% \times x$

=> $85\% \times x = 204$

=> $\frac{85x}{100} = 204$

=> $x = \frac{204 \times 100}{85} = 12 \times 20 = 240$

Thus, number of days school was opened = 240 days

Question 14: A's income is 20% less than that of B. By what per cent is B's income more than A'

Solution: Let the income of B be $Rs\ 100$

Given that income of A is 20% less than B

Thus, income of A = $Rs80$

Now, if income of A is Rs80, then income of B = Rs100

If income of A is Rs1, then income of B = $\frac{100}{80}$

If income of A is Rs100, then income of B = $\frac{100 \times 100}{80} = Rs125$

Thus, B's income is more than A's income by $(125 - 100) = 25\%$

Question 15: The price of petrol goes up by 10%. By how much per cent must a motorist reduce the consumption of petrol so that the expenditure on it remains unchanged?

Solution: Let's assume the consumption of petrol be 1 unit

And let the cost of 1 unit of petrol be $Rs100$

Now, if the price goes up by 10%

New cost of 1 unit = $Rs\ 110$

Since $Rs\ 110$ = Cost of 1 unit

Then, $Rs\ 1$= Cost of $\frac{1}{110}$ unit

$Rs\ 100$ = Cost of $\frac{1}{110} \times 100 = \frac{10}{11}$ units

Thus, cost of $\frac{10}{11}$ units of petrol = $Rs\ 100$

Reduction in consumption = $1 - \frac{10}{11} = \frac{1}{11}$

Percentage of reduction in consumption = $\left(\frac{1}{11} \times \frac{1}{1} \times 100\right)\% = \frac{100}{11}\% = 9\frac{1}{11}\%$

Question 16: The population of a town increases by 8% annually. If the present population is 54000, what was it a year ago?

Solution: Let the population of town a year ago be x

It is given that population of a town increase by 8% annually

Thus, present population = $108\% \times x = \frac{108x}{100} = \frac{54x}{50} = \frac{27x}{25}$

Present population is given to be 54000

=> $\frac{27x}{25} = 54000$

=> $x = \frac{54000 \times 25}{27} = 2000 \times 25 = 50000$

Therefore, population a year ago was 50000

Question 17: The value of a machine depreciates every year by 20%. If the present value of the machine be Rs 160000, what was its value last year?

Solution: Let value of machine last year be $Rs\ x$

It is given that value depreciates by 20% every year

Thus, present value of machine = $80\% \times x = \frac{80x}{100} = \frac{8x}{10} = \frac{4x}{5}$

Also present value of machine is given to be $Rs\ 160000$

=> $\frac{4x}{5} = 160000$

=> $x = \frac{160000 \times 5}{4} = 40000 \times 5 = 200000$

Therefore, value of machine last year was $Rs\ 200000$

Question 18: An alloy contains 40% copper, 32% nickel and rest zinc. Find the mass of zinc in one kg of the alloy.

Solution: Mass of alloy = 1kg

Percentage of copper = 40%

Percentage of nickel = 32%

Percentage of zinc = $\big(100 - (40 + 32)\big)\% = (100 - 72)\% = 28\%$

Mass of zinc in 1 kg of alloy = $\frac{28}{100} \times 1 = 0.28$ kg

= $0.28 \times 1000 = 280g$

Question 19: Balanced diet should contain 12% of proteins, 25% of fats and 63% of carbohydrates. If a child needs 2600 calories in his food daily, find in calories the amount of each of these in his daily food intake.

Solution: Total calories needed = 2600

Percentage of proteins = 12%

Amount of proteins = $12\% \times 2600 = \frac{12}{100} \times 2600 = 312$ calories

Percentage of fats = 25%

Amount of fats = $25\% \times 2600 = \frac{25}{100} \times 2600 = 650$ calories

Percentage of carbohydrates = 63%

Amount of carbohydrates = $63\% \times 2600 = \frac{63}{100} \times 2600 = 1638$ calories

Question 20: Gunpowder contains 75% nitre and 10% sulphur. Find the amount of gunpowder which carries 9 kg nitre. What amount of gunpowder would contain 2.5 kg sulphur?

Solution: Let the amount of gunpowder be x kg

So, x kg be the amount of gunpowder having 9 kg nitre

Percentage of nitre = 75%

=> $75\% \times x = 9$

=> $\frac{75x}{100} = 9$

=> $x = \frac{900}{75} = 12$ Kg

Now, let x kg be the amount of gunpowder having 2.5 kg sulphur

Percentage of sulphur = 10%

=> $10\% \times x = 2.5$

=> $\frac{10x}{100} = 2.5$

=> $x = \frac{2.5 \times 100}{10} = 25$ Kg

Question 21: Divide Rs 7000 among A, B and C such that A gets 50% of what B gets and B gets 50% of what C gets.

Solution: Let the amount C gets be $Rs\ x$

Then, amount B gets = $50\% \times x = \frac{50x}{100} = \frac{x}{2}$

And Amount A gets = $50\% \times \frac{x}{2} = \frac{50}{100} \times \frac{x}{2} = \frac{x}{4}$

Given that $x + \frac{x}{2} + \frac{x}{4} = 7000$

=> $\frac{4x+2x+x}{4} = 7000$

=> $\frac{7x}{4} = 7000$

=> $x = \frac{7000 \times 4}{7} = 4000$

Thus, A's share = $\frac{4000}{4} = 1000$

B's share = $\frac{4000}{2} = 2000$

C's share = 4000

Question 22: Find the percentage of pure gold in 22-carat gold, if 24-carat gold is 100% pure.

Solution: Since 22- carat gold contains 22 parts out of 24 parts

Therefore, percentage of pure gold in 22 carat gold = $\left(\frac{22}{24} \times 100\right)\% = \frac{275}{3}\% = 91\frac{2}{3}\%$

Question 23: The salary of an officer is increased by 25%. By what per cent should the new salary be decreased to restore the original salary?

Solution: Let the original salary be $Rs\ x$

After increment of 25%,

Salary becomes $100\left(1+\frac{25}{100}\right)$

=> $100\left(\frac{100+25}{100}\right)=125$

Now, we have to restore the original salary, so let new salary be decreased by x%

=> $125\left(1-\frac{x}{100}\right)=100$

=> $\left(1-\frac{x}{100}\right)=\frac{100}{125}$

=> $1-\frac{100}{125}=\frac{x}{100}$

=> $\frac{125-100}{125}=\frac{x}{100}$

=> $\frac{25}{125}=\frac{x}{100}$

=> $x=\frac{25\times100}{125}=20\%$

Exercise 9B

Question 1: $\frac{3}{5}$ =?

Solution: $(\frac{3}{5}\times100)\%=60\%$

Question 2: 0.8% when expressed as a decimal, is

Solution: $\frac{0.8}{100}=\frac{8}{1000}=0.008$

Question 3: 6:5 when expressed as a percentage, is

Solution: Ratio = 6: 5

$\left(\frac{6}{5}\times100\right)\%=120\%$

Question 4: 5% of a number is 9. The number is

Solution: Let a number be x

Then, according to given question,

$5\% \times x = 9$

=> $\frac{5x}{100} = 9$

=> $x = \frac{900}{5} = 180$

Question 5: What per cent of 90 is 120?

Solution: $\left(\frac{120}{90} \times 100\right)\% = \frac{400}{3}\% = 133\frac{1}{3}\%$

Question 6: What per cent of 10 kg is 250 g?

Solution: Since 1kg = 1000g

$\left(\frac{250}{10000} \times 100\right)\% = 2.5\%$

Question 7: 40% of? = 240

Solution: $40\% \times x = 240$

=> $\frac{40}{100} \times x = 240$

=> $x = \frac{240 \times 100}{40} = 600$

Question 8: ? % of 400 = 60

Solution: $x\% \times 400 = 60$

=> $\frac{x}{100} \times 400 = 60$

=> $4x = 60$

=> $x = 15$

Question 9: (180% of?) ÷ 2 = 504

Solution: $(180\% \times x) \div 2 = 504$

=> $\frac{(180\% \times x)}{2} = 504$

=> $180\% \times x = 504 \times 2$

=> $\frac{180x}{100} = 1008$

=> $x = \frac{1008 \times 100}{180} = 560$

Question 10: 20% of Rs 800 =?

Solution: $20\% \times Rs\ 800 = \frac{20}{100} \times 800 = Rs160$

Question 11: In an examination, Nitin gets 98 marks. This amounts to 56% of the maximum marks. What are the maximum marks?

Solution: Let the maximum marks be x

According to given question,

$56\% \times x = 98$

=>$\frac{56x}{100} = 98$

=> $x = \frac{98 \times 100}{56} = \frac{9800}{56} = 175$

Question 12: 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

Solution: Let the number be x

When number is increased by 10%,

New number = $110\% \times x = \frac{110x}{100} = \frac{11x}{10}$

Then, resulting number is decreased by 10%

New number = $90\% \times \frac{11x}{10} = \frac{90}{100} \times \frac{11x}{10} = \frac{99x}{100}$

Thus, net decrease = $x - \frac{99x}{100} = \frac{x}{100}$

Net decrease percentage = $\left(\frac{x}{100} \times \frac{1}{x} \times 100\right)\% = 1\%$

Question 13: A period of 4 hours 30 min is what per cent of a day?

Solution: 4 hours 30 minutes = $4 + \frac{30}{60} = 4 + \frac{1}{2} = \frac{9}{2} = 4.5$hours

In a day there are 24 hours.

Thus, $\left(\frac{4.5}{24} \times 100\right)\% = \frac{225}{12}\% = \frac{75}{4}\% = 18\frac{3}{4}\%$

Question 14: In an examination, 65% of the total examines passed. If the number of failures is 420, the total number of examinees is

Solution: Let the total number of examinees be x

Percentage of passed examinees = 65%

Thus percentage of failures = (100-65) %=35%

Given that number of failures = 420

=> $35\% \times x = 420$

=> $\frac{35x}{100} = 420$

=> $x = \frac{420 \times 100}{35} = 1200$

Question 15: A number exceeds 20% of itself by 40. The number is

Solution: Let the number be x

Given that $x = (20\% \times x) + 40$

$\Rightarrow x = \frac{20x}{100} + 40$

$\Rightarrow x - \frac{20x}{100} = 40$

$\Rightarrow \frac{80x}{100} = 40$

$\Rightarrow x = \frac{40 \times 100}{80} = 50$

Question 16: A number decreased by $27\frac{1}{2}\%$ gives 87. The number is

Solution: Let the number be x

According to given question,

$x - 27\frac{1}{2}\%x = 87$

$\Rightarrow x - \frac{55}{2}\%x = 87$

$\Rightarrow x - \frac{55x}{200} = 87$

$\Rightarrow x - \frac{11x}{40} = 87$

$\Rightarrow \frac{29x}{40} = 87$

$\Rightarrow x = \frac{87 \times 40}{29} = 120$

Question 17: 0.05 is what per cent of 20?

Solution: $20 \times x\% = 0.05$

$\Rightarrow \frac{x}{100} = \frac{0.05}{20}$

$\Rightarrow x = \frac{0.05 \times 100}{20} = 0.25\%$

Question 18: One-third of 1206 is what per cent of 134?

Solution: $\frac{1}{3} \times 1206 = x\% \times 134$

=> $402 = \frac{134x}{100}$

=> $\frac{402 \times 100}{134} = x$

=> $x = 300\%$

Question 19: x% of y is y% of?

Solution: $x\% \times y = y\% \times x$

Question 20: What per cent of $\frac{2}{7}$ is $\frac{1}{35}$?

Solution: $x\% \times \frac{2}{7} = \frac{1}{35}$

=> $\frac{x}{100} \times \frac{2}{7} = \frac{1}{35}$

=> $\frac{2x}{700} = \frac{1}{35}$

=> $x = \frac{1}{35} \times \frac{700}{2} = 10\%$