

Question 1.

Convert the following percents into fractions in simplest form:

(i) 25%

(ii) 150%

(iii) $7\frac{1}{2}$ %

(iv) $33\frac{1}{3}$ %

Solution:

$$(i) 25\% = \frac{25}{100} = \frac{25 \div 25}{100 \div 25} = \frac{1}{4}$$

$$(ii) 150\% = \frac{150}{100} = \frac{150 \div 50}{100 \div 50} = \frac{3}{2}$$

$$(iii) 7\frac{1}{2}\% = \frac{15}{2 \times 100} = \frac{3}{40}$$

$$(iv) 33\frac{1}{3}\% = \frac{100}{3 \times 100} = \frac{1}{3}$$

Question 2.

Convert the following fractions into percents:

(i) $\frac{1}{8}$

(ii) $\frac{5}{4}$

(iii) $\frac{9}{16}$

(iv) $\frac{3}{7}$

(v) $\frac{11}{15}$

(vi) $1\frac{3}{8}$

Solution:

$$(i) \frac{1}{8} = \frac{1 \times 100}{8} = \frac{25}{2} \% = 12.5\%$$

$$(ii) \frac{5}{4} = \frac{5 \times 100}{4} = 125\%$$

$$(iii) \frac{9}{16} = \frac{9 \times 100}{16} = \frac{225}{4} \% = 56 \frac{1}{4} \%$$

$$(iv) \frac{3}{7} = \frac{3 \times 100}{7} = \frac{300}{7} \% = 42 \frac{6}{7} \%$$

$$(v) \frac{11}{15} = \frac{11 \times 100}{15} = \frac{220}{3} \% = 73 \frac{1}{3} \%$$

$$(vi) 1 \frac{3}{8} = \frac{11}{8} \times 100 = \frac{275}{2} = 137 \frac{1}{2} \%$$

Question 3.

(i) 6 students out of 40 students in a class are absent. What percentage of students are absent?

(ii) Antony secured 384 marks out of 500 marks. Find the percentage of marks secured by Antony.

(iii) A shop has 500 shirts, out of which 15 are defective. What percentage of shirts are defective?

(iv) Vani has a collection of bangles. She has 20 gold bangles and 10 silver bangles. What is the percentage of each type of bangles?

(v) There are 120 voters and 90 of them voted. What percent did not vote?

Solution:

(i) 6 students out of 40 are absent

$$\frac{6}{40} \times 100 = \frac{600}{40} = 15\%$$

(ii) Antony secured 384 marks out of 500 marks

$$\text{Percentage of secured marks} = \frac{384}{500} \times 100 = 76\frac{1}{5}\% = 76.8\%$$

(iii) A shop has 500 shirts

Defective shirts = 15

$$\text{Percentage of defective shirts} = \frac{15}{500} \times 100 = 3\%$$

(iv) Vani has 20 gold and 10 silver bangles

Total bangles = 30

$$\text{Percentage of gold bangles} = \frac{20}{30} \times 100 = \frac{200}{3} = 66\frac{2}{3}\%$$

$$\text{Percentage of silver bangles} = \frac{10}{30} \times 100 = 33\frac{1}{3}\%$$

(v) Out of 120 votes, 90 of them voted

Those who does not voted = $120 - 90 = 30$

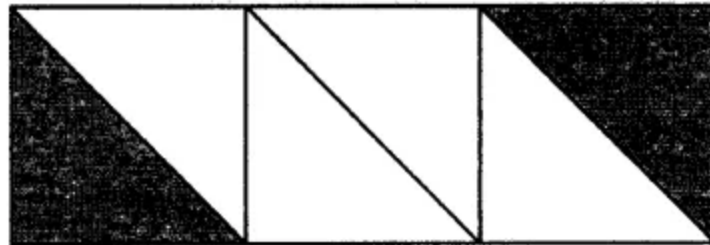
$$\text{Percentage} = \frac{30}{120} \times 100 = 25\%$$

Question 4.

Estimate the part of the figure which is shaded and hence find the percentage of the part which is shaded.



(i)



(ii)



(iii)

Solution:

$$(i) \text{ 3 parts out of 4} = \frac{3}{4} = \frac{3}{4} \times 100 = 75\%$$

$$(ii) \text{ 2 parts out of 6} = \frac{2}{6} = \frac{1}{3} = \frac{1}{3} \times 100 = \frac{100}{3} = 33\frac{1}{3}\%$$

$$(iii) \text{ 5 parts out of 8} = \frac{5}{8} = \frac{5}{8} \times 100 = \frac{125}{2}\% = 62\frac{1}{2}\% \text{ or } 62.5\%$$

Question 5.

Convert the following percentage into ratios in sirup rest form:

(i) 14 %

(ii) 134 %

(iii) 33 $\frac{1}{3}$ %

(iv) 37.5 %

Solution:

$$(i) 14\% = \frac{14}{100} = \frac{7}{50} = 7 : 50$$

$$(ii) 1\frac{3}{4}\% = \frac{7}{4}\% = \frac{7}{4 \times 100}$$

$$= \frac{7}{400} = 7 : 400$$

$$(ii) 33\frac{1}{3}\% = \frac{100}{3 \times 100} = \frac{1}{3} = 1 : 3$$

$$(iv) 37.5\% = 37\frac{1}{2}\% = \frac{75}{2}\%$$

$$= \frac{75}{2 \times 100} = \frac{3}{8} = 3 : 8$$

Question 6.

Express the following ratios as percentages:

(i) 5 : 4

(ii) 1 : 1

(iii) 2 : 3

(iv) 9 : 16

Solution:

$$(i) 5 : 4 = \frac{5}{4} \times 100 = 125\%$$

$$(ii) 1 : 1 = \frac{1}{1} \times 100 = 100\%$$

$$(iii) 2 : 3 = \frac{2}{3} \times 100 = \frac{200}{3} = 66\frac{2}{3}\%$$

$$(iv) 9 : 16 = \frac{9}{16} \times 100 = \frac{225}{4} = 56\frac{1}{4}\%$$

Question 7.

An alloy consists of 7 parts of zinc and 33 parts of copper. Find the percentage of copper in the alloy?

Solution:

In an alloy,

7 parts of zinc and 33 parts of copper

Total parts of alloy = $7 + 33 = 40$ parts

33 parts out of 40 parts is copper

Percentage of copper = $\frac{33}{40} \times 100$

$$= \frac{165}{2} \%$$

$$= 82.5\%$$

Question 8.

Chalk contains calcium, carbon and sand in the ratio 12 : 3 : 10. Find the percentage of carbon in the chalk 12%.

Solution:

In chalk, ratio of calcium, carbon and sand = 12 : 3 : 10.

Total of ratio's = $12 + 3 + 10 = 25$ and carbon = 3

Percentage of carbon in the chalk 3

$$= \frac{3}{25} \times 100$$

$$= 12\%$$

Question 9.

If ₹ 2500 is to be divided among Ravi, Raju and Roy, so that Ravi gets two

parts, Raju three parts and Roy five parts. How much money will each get?
What will it be in percentages?

Solution:

Total amount = ₹ 2500

Ravi gets = 2 parts

Raju gets = 3 parts

and Roy gets = 5 parts

Total parts = 10

Ravi will get = $\frac{2}{10} \times 2500 = ₹ 500$

= $\frac{2}{10} \times 100 = 20\%$

Raju will get = $\frac{3}{10} \times 2500 = ₹ 750$

= $\frac{3}{10} \times 100 = 30\%$

Roy will get = $\frac{5}{10} \times 2500 = ₹ 1250$

= $\frac{5}{10} \times 100 = 50\%$

Question 10.

Convert the following percentages to decimals:

(i) 28%

(ii) 3%

(iii) 0.44%

(iv) $37\frac{1}{2}\%$

Solution:

$$(i) 28\% = \frac{28}{100} = 0.28$$

$$(ii) 3\% = \frac{3}{100} = 0.03$$

$$(iii) 0.44\% = \frac{0.44}{100} = 0.0044$$

$$(iv) 37\frac{1}{2}\% = \frac{75}{2 \times 100} = \frac{75}{200} = 0.375\%$$

Question 11.

Convert the following decimals to percents:

(i) 0.65

(ii) 0.9

(iii) 2.1

(iv) 0.02

Solution:

$$(i) 0.65 = \frac{65}{100} = 65\%$$

$$(ii) 0.9 = \frac{9}{10} \times \frac{10}{10} = \frac{90}{100} = 90\%$$

$$iii) 2.1 = \frac{21}{10} \times \frac{10}{10} = \frac{210}{100} = 210\%$$

$$iv) 0.02 = \frac{0.02}{100} = 2\%$$