

EXERCISE 8A

1. Express each of the following as percent:

(i) $\frac{3}{4}$

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

(iii) 0.025

(iv) 0.125

Solution:

(i) $\frac{3}{4}$

We can write it as

$$= \frac{3}{4} \times 100$$

So we get

$$= 75\%$$

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

We can write it as

$$= \frac{2}{3} \times 100$$

So we get

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

$$= 66 \frac{2}{3} \%$$

(iii) 0.025

We can write it as

$$= \frac{25}{1000} \times 100$$

So we get

$$= \frac{25}{10}\%$$

$$= 2.5\%$$

(iv) 0.125

We can write it as

$$= \frac{125}{1000} \times 100$$

So we get

$$= \frac{125}{10}$$

$$= 12.5\%$$

2. Express the following percentages as fractions and as decimal numbers:

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

(ii) 2.50 %

(iii) 0.02 %

(iv) 175 %

Solution:

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

We can write it as

$$= \frac{15}{2 \times 100}$$

So we get

$$= \frac{15}{200}$$

$$= 0.075$$

$$\begin{array}{r} 0.075 \\ 200 \overline{) 15.000} \\ \underline{- 1400} \\ 1000 \\ \underline{- 1000} \\ 0 \end{array}$$

(ii) 2.50 %

We can write it as
 $= 250 / (100 \times 100)$
So we get
 $= 250 / 10000$
 $= 0.0250$
 $= 0.025$

(iii) 0.02 %

We can write it as
 $= 0.02 / 100$
So we get
 $= 2 / (100 \times 100)$
 $= 2 / 10000$
By further calculation
 $= 0.0002$

(iv) 175 %

We can write it as
 $= 175 / 100$
So we get
 $= 7/4$
 $= 1.75$

3. What percent is:

(i) 16 hours of 2 days?

(ii) 40 paise of ₹ 2?

(iii) 25 cm of 4 metres?

(iv) 600 gm of 5 kg?

Solution:

(i) 16 hours of 2 days

We can write it as
 $= 16 / (2 \times 24)$
So we get
 $= 16 / 48 \times 100\%$
Here
 $= 100/3\%$
 $= 33 \frac{1}{3} \%$

(ii) 40 paise of ₹ 2

We can write it as

$$= 40 / (2 \times 100)$$

So we get

$$= 40 / 200 \times 100\%$$

Here

$$= 20\%$$

(iii) 25 cm of 4 metres

We can write it as

$$= 25 / (4 \times 100)$$

So we get

$$= 1 / 16 \times 100\%$$

Here

$$= 25 / 4\%$$
$$= 6 \frac{1}{4}\%$$

(iv) 600 gm of 5 kg

We can write it as

$$= 600 / (5 \times 1000) \times 100\%$$

So we get

$$= 12\%$$

4. Find the value of:

(i) 5% of ₹ 350

(ii) 10% of ₹ 400.40

(iii) 1% of ₹ 500

(iv) $12 \frac{1}{2}\%$ of 80 kg

(v) $\frac{5}{8}\%$ of ₹ 600

(vi) $33 \frac{1}{3}\%$ of 27 m

Solution:

(i) 5% of ₹ 350

We can write it as

$$= 350 \times \frac{5}{100}$$

So we get

$$= \frac{35}{2}$$
$$= ₹ 17.50$$

(ii) 10% of ₹ 400.40

We can write it as

$$= 400.40 \times \frac{10}{100}$$

So we get

$$= ₹ 40.04$$

(iii) 1% of ₹ 500

We can write it as

$$= 500 \times \frac{1}{100}$$

So we get

$$= ₹ 5$$

(iv) $12 \frac{1}{2}\%$ of 80 kg

We can write it as
 $= 80 \times 25 / (2 \times 100)$
So we get
 $= 10 \text{ kg}$

(v) $5/8$ % of ₹ 600
We can write it as
 $= 600 \times 5 / (8 \times 100)$
So we get
 $= ₹ 15/4$
 $= ₹ 3.75$

(vi) $33 \frac{1}{3}$ % of 27 m
We can write it as
 $= 27 \times 100 / (3 \times 100)$
So we get
 $= 9 \text{ m}$

5. In a class of 60 children, 30% are girls. How many boys are there?

Solution:

No. of children = 60
Percentage of girls = 30%
So total number of girls = 30% of 60
We can write it as
 $= 60 \times 30/100$
 $= 18$
Number of boys = $60 - 18 = 42$

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6. In an election, two candidates A and B contested. A got 60% of the votes. The total votes polled were 8000. How many votes did each get?

Solution:

Total votes polled = 8000
A got 60% of the votes
Number of votes A got = 60% of 8000
We can write it as
 $= 8000 \times 60/100$
 $= 4800$
Number of votes B got = $8000 - 4800 = 3200$

7. A person saves 12% of his salary every month. If his salary is ₹ 2,500, find his expenditure.

Solution:

Salary = ₹ 2,500
Saving in every month salary = 12% of salary
So the total savings = 12% of ₹ 2,500
We can write it as
 $= 2500 \times 12/100$
 $= ₹ 300$

Total expenditure = $2500 - 300 = ₹ 2200$

8. Seeta got 75% marks out of a total of 800. How many marks did she lose?

Solution:

Total marks = 800

Marks scored by Seeta = 75% of total marks

Total marks scored by Seeta = 75% of 800

We can write it as

$$= 800 \times 75/100$$

$$= 600$$

So the marks lost by Seeta = $800 - 600 = 200$

9. A shop worth ₹ 25, 000 was insured for 95% of its value. How much would the owner get in case of any mishappening?

Solution:

Worth of shop = ₹ 25, 000

Amount insured = 95% of its values

We can write it as

$$= 95\% \text{ of } ₹ 25, 000$$

So we get

$$= ₹ 25, 000 \times 95/100$$

$$= ₹ 23, 750$$

10. A class has 30 boys and 25 girls. What is the percentage of boys in the class?

Solution:

Number of boys = 30

Number of girls = 25

So the total number of children = $30 + 25 = 55$

So the percentage of boys in the class = $30/55 \times 100$

We get

$$= 600/11$$

$$= 54 \frac{6}{11} \%$$

11. Express:

(i) $3 \frac{2}{5}$ as percent

(ii) 0.0075 as percent

(iii) 3: 20 as percent

(iv) 60 cm as percent of 1 m 25 cm

(v) 9 hours as percent of 4 days.

Solution:

(i) $3 \frac{2}{5}$ as percent

We can write it as

$$3 \frac{2}{5} = (3 \times 5 + 2)/ 5 = 17/5$$

By converting $17/5$ as a percent

$$= 17/5 \times 100$$

$$= 340\%$$

(ii) 0.0075 as percent

We can write it as

$$0.0075 \times 100 = 0.75\%$$

(iii) 3: 20 as percent

We can write it as

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

So we get

$$= 15\%$$

(iv) 60 cm as percent of 1 m 25 cm

We can write it as

$$60 \text{ cm as percent of } (1 \times 100 + 25) \text{ cm}$$

We know that 1m = 100 cm

So we get

$$= \frac{60}{125} \times 100$$

By further calculation

$$= 12 \times 4$$

$$= 48\%$$

(v) 9 hours as percent of 4 days

We know that 1 day = 24 hours

So 4 days = $4 \times 24 = 96$ hours

We can write it as

$$= \frac{9}{96} \times 100$$

$$= \frac{75}{8}\%$$

$$= 9 \frac{3}{8}\%$$

12. (i) Find 2% of 2 hours 30 min.

(ii) What percent of 12 kg is 725 gm?

Solution:

(i) 2% of 2 hours 30 min

We know that

$$1 \text{ hour} = 60 \text{ minutes}$$

So we get

$$2 \text{ hours } 30 \text{ min} = 2 \times 60 + 30$$

$$= 120 + 30$$

$$= 150 \text{ min}$$

We can write it as

$$= 150 \times \frac{2}{100}$$

So we get

$$= \frac{30}{10}$$

$$= 3 \text{ minutes}$$

(ii) 12 kg is 725 gm

We know that

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

So we get

$$12 \text{ kg} = 12 \times 1000 = 12000 \text{ gm}$$

We can write it as
 $= \frac{725}{12000} \times 100$
So we get
 $= \frac{725}{120}$
 $= 145/24\%$
 $= 6 \frac{1}{24}\%$



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