

SUB TOPIC: BASIC CONCEPT, TO EXPRESS AN ORDINARY GIVEN STATEMENT AS PERCENT

SUBJECT : MATHEMATICS

CHAPTER NUMBER: 8

CHAPTER NAME :PERCENT AND PERCENTAGE

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LEARNING OUTCOME

- Students will be able to
- **to express an ordinary given statement as percent.**
- To express one quantity as a percent of the other
- To find percentage of a quantity.

PREVIOUS CONNECT

Express 75% as a fraction



A **percentage** is a number or ratio that can be expressed as a fraction of 100.

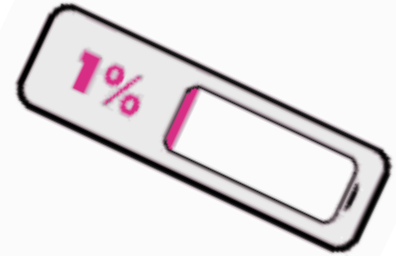
If we have to calculate percent of a number, divide the number by whole and multiply by 100.

Hence, the **percentage means**, a part per hundred.

The word per cent means **per 100**. It represented by the symbol “%”.

TO FIND PERCENTAGE OF A QUANTITY

- A percentage is a fraction with denominator as 100 i.e. $\% = \frac{1}{100}$,
- Therefore, to determine the exact value of a percent of a given quantity we need to express the given percent as fraction and multiply it by the given number.



EVALUATION QUESTIONS

EX 8A

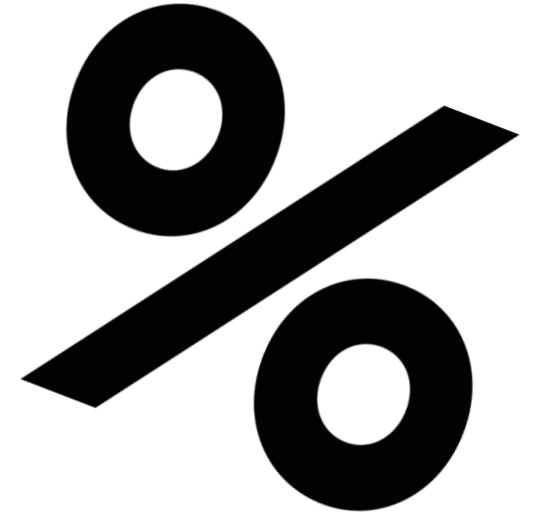
1. Express each of the following as percent:

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

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

(iii) 0.025

(iv) 0.125



Solution:

(i) $3/4$

We can write it as

$$= 3/4 \times 100$$

So we get

$$= 75\%$$

(ii) $2/3$

We can write it as

$$= 2/3 \times 100$$

So we get

$$= 200/3$$

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

(iii) 0.025

We can write it as

$$= 25/1000 \times 100$$

So we get

$$= 25/10\%$$

$$= 2.5\%$$

(iv) 0.125

We can write it as

$$= 125/1000 \times 100$$

So we get

$$= 125/10$$

$$= 12.5\%$$



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

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

(ii) 2.50%

(iii) 0.02%

(iv) 175%





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2.i)Solution:

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

We can write it as

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

So we get

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

$$= 0.075$$

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



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



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(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 paisa of ₹ 2?**
 - (iii) 25 cm of 4 metres?**
 - (iv) 600 gm of 5 kg?**





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Solution:

(i) 16 hours of 2 days

We can write it as

$$= 16 / (2 \times 24)$$

So we get

$$= 16/48 \times 100\%$$

Here

$$= 100/3\%$$

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

(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



Solution:

(i) 5% of ₹ 350

We can write it as

$$= 350 \times 5/100$$

So we get

$$= 35/2$$

$$= ₹ 17.50$$

(ii) 10% of ₹ 400.40

We can write it as

$$= 400.40 \times 10/100$$

So we get

$$= ₹ 40.04$$



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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

$$= 60 \times 30/100$$

$$= 18$$

$$\text{Number of boys} = 60 - 18 = 42$$



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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

$$= 2500 \times 12/100$$

$$= ₹ 300$$

$$\text{Total expenditure} = 2500 - 300 = ₹ 2200$$

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% of ₹ 25, 000

So we get

= ₹ 25, 000 × 95/100

= ₹ 23, 750

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.



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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

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

- 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

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

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

$$= 120 + 30$$

$$= 150 \text{ min}$$

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

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

$$= 3 \text{ minutes}$$

(

ii) 12 kg is 725 gm

1 kg = 1000 gm

So we get

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

$= \frac{725}{12000} \times 100$

$= \frac{725}{120}$

$= \frac{145}{24}\%$

$= 6 \frac{1}{24}\%$

HOME ASSIGNMENT

- EX8 A

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