

Unit 12 : Percentage

Friendly Notes

Percent

A **percentage** is a way of expressing a fraction with a denominator of 100.

A percentage is indicated by the symbol, % (percent).

1. Write 13 out of 100 as a percentage.

$$13 \text{ out of } 100 = 13\%$$

13% is another way of writing $\frac{13}{100}$ or 0.13.
We read 13% as 13 percent.



2. Express 15% as a fraction in its simplest form.

$$\begin{aligned} 15\% &= \frac{15}{100} \\ &= \frac{3}{20} \end{aligned}$$

3. Express 88% as a decimal.

$$\begin{aligned} 88\% &= \frac{88}{100} \\ &= 0.88 \end{aligned}$$

4. Express 0.45 as a percentage.

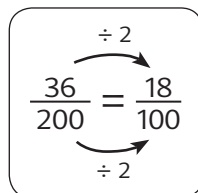
$$\begin{aligned} 0.45 &= \frac{45}{100} \\ &= 45\% \end{aligned}$$

Writing Fractions as Percentages

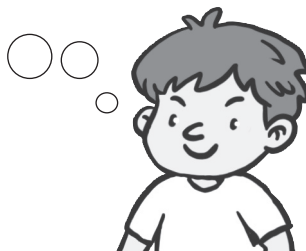
Express $\frac{36}{200}$ as a percentage.

Method 1:

$$\begin{aligned}\frac{36}{200} &= \frac{18}{100} \\ &= 18\%\end{aligned}$$


$$\frac{36}{200} = \frac{18}{100}$$

Arrows indicate dividing both the numerator (36) and the denominator (200) by 2 to reach the simplified fraction 18/100.



Method 2:

$$\begin{aligned}\frac{36}{200} &= \frac{36}{200} \times 100\% \\ &= 18\%\end{aligned}$$

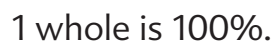
Percentage of a Quantity

There are 45 children in a class. 40% of the children are girls. How many boys are there in the class?

$$100\% - 40\% = 60\%$$

60% of the children are boys.

$$\begin{aligned}60\% \text{ of } 45 &= \frac{60}{100} \times 45 \\ &= 27\end{aligned}$$



There are 27 boys in the class.