Percent

When we see the word *percent* or *percentage* we immediately think of:

"out of 100" or *"over 100"*

A percent is a fraction which has 100 as its denominator and is usually followed by the percent sign %.

NOTE: 15% means $\frac{15}{100}$ or 15 parts out of one hundred parts. As a decimal it's written as 0.15

Eg. Find 10% of $200

Working:

10% means $\frac{10}{100}$, of means multiply

$\frac{10}{100}$ x 200 = $20

Simple Interest

$$S.I. = \frac{PxRxT}{100}$$

Conversion Chart

Percentage	Fraction	Decimal
100%	1	1.00
75%	$\frac{3}{4}$	0.75
66.66%	$\frac{2}{3}$	0.66
50%	$\frac{1}{2}$	0.50
33.33%	$\frac{1}{3}$	0.33
25%	$\frac{1}{4}$	0.25
20%	$\frac{1}{5}$	0.20
12.5%	$\frac{1}{8}$	0.125
10%	$\frac{1}{10}$	0.10
5%	$\frac{1}{20}$	0.05

Profit

If the selling price (SP) is more than the cost price (CP), you would get a profit (P).

$$SP-CP=P$$

Loss

If the cost price (CP) is more than the selling price (SP), you would get a loss (L).

$$CP-SP=L$$

VAT (12.5% or $\frac{1}{8}$)

Note: gov't can change this value*

1) To find the VAT payable on an item, multiply the cost by $\frac{1}{8}$
2) To find the total cost of an item, inclusive of VAT, multiply the cost by $\frac{9}{8}$

Conversion:

Fractions & Percentages

Common Fraction ⟹ Percentage

Multiply the Fraction (F) by 100

$$Fx100$$

Eg. $\frac{1}{4}$ as a percent is $\frac{1}{4}$ x 100 = 25%

Percentage ⟹ Common Fraction

Divide the Percentage (P) by 100

$$P \div 100 = \frac{P}{100}$$

Eg. 10% as a fraction is $\frac{10}{100}$ (reduce) = $\frac{1}{10}$

Conversion:

Mixed Numbers & Percentages

Mixed Number % ⟹ Fraction

(Step 1.) Change Mixed Number % to Improper Fraction (IF)

(Step 2.) Multiply *IF* by $\frac{1}{100}$

$$IF \times \frac{1}{100}$$

Eg. Step 1. $2\frac{1}{2}\% = \frac{5}{2}\%$

Step 2. $\frac{5}{2} \times \frac{1}{100} = \frac{1}{40}$

Conversion:

Decimal Fractions & Percentages

Decimal Fraction → Percentage

Multiply the Decimal Fraction (DF) by 100

(Shift point 2 places to the right)

DFx100

Eg. 0.65 x 100 = 65% (0.65 = 65%)

Percentage → Decimal Fraction

Divide the Percentage (P) by 100

(Shift point 2 places to the left)

P÷100

Eg 50% ÷ 100 = 0.50 (50 = 0.50)

Conversion:

Common Fractions & Decimal Fractions

Common Fraction ➡ Decimal Fraction

Divide the Numerator (N) by the Denominator (D)

$N \div D$

Eg $\frac{3}{5} = 0.6$

$$5 \overline{)3.0}$$
$$\underline{3\,0}$$
$$0\,0$$

Decimal Fraction ➡ Common Fraction

Draw a Vinculum under the Decimal Fraction, write 1 under the point and write 0 under each digit after the point. Reduce the fraction formed.

Eg $0.25 = \frac{1}{4}$

$$\frac{0.\,25}{100} = \frac{1}{4}$$