

# Using Formulae

A formula is a set of instructions which tells you how to carry out a calculation.

Formulae can be written using words or shortened to just letters:

- **Speed = Distance ÷ Time**
- **S = D ÷ Time**

When using formulae:

1. **Always show your working out**
2. **Be careful to put the correct number in the correct place**
3. **Answer the question and use the correct units**

## Examples

A bus travels a distance of 250km in 4 hours. What was the average speed of the journey?

$$\begin{aligned}\text{Speed} &= \text{Distance} \div \text{Time} \\ &= 250 \div 4 \\ &= 62.5\end{aligned}$$

**Average speed = 62.5 km/hour**

Convert 100°C into °F by using the formula

$$\text{Temp}(^{\circ}\text{F}) = (\text{Temp}(^{\circ}\text{C}) \times 1.8) + 32$$

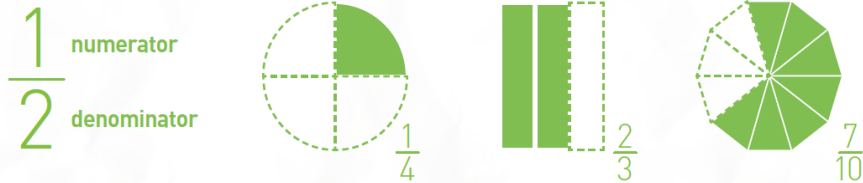
$$\begin{aligned}\text{Temp}(^{\circ}\text{F}) &= (100 \times 1.8) + 32 \\ &= 180 + 32 \\ &= 212\end{aligned}$$

$$100^{\circ}\text{C} = 212^{\circ}\text{F}$$



# Fractions

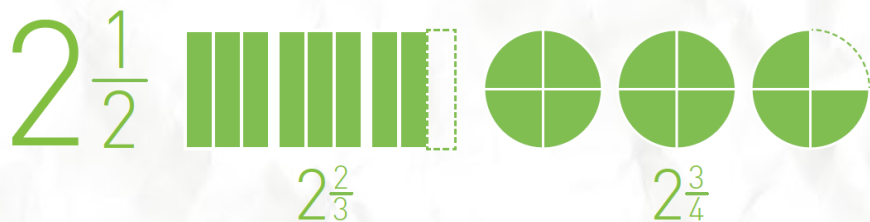
The numerator is less than the denominator.



The numerator is larger than or equal to the denominator.



A number written as a whole number with a proper fraction



Fractions, decimal and percentage converter

Fraction	Decimal	Percentage
$\frac{1}{2}$	0.5	50%
$\frac{1}{4}$	0.25	25%
$\frac{3}{4}$	0.75	75%
$\frac{1}{3}$	0.33333...	33%
$\frac{2}{3}$	0.66666...	67%
$\frac{1}{10}$	0.1	10%
$\frac{2}{10}$	0.2	20%
$\frac{1}{5}$	0.2	20%
$\frac{2}{5}$	0.4	40%
$\frac{X}{10}$	0.X	X0%

# Rounding

How to round:

1. Look at the digit in the place value to be rounded to
2. Increase it by 1 if the digit to the right of it is 5 or more
3. Leave it the same if the digit to the right of it is less than 5
4. Remove everything to the right of the digit.

Round to the nearest:

3 decimal places **6945.3728** - **6945.373**

2 decimal places **6945.3728** - **6945.37**

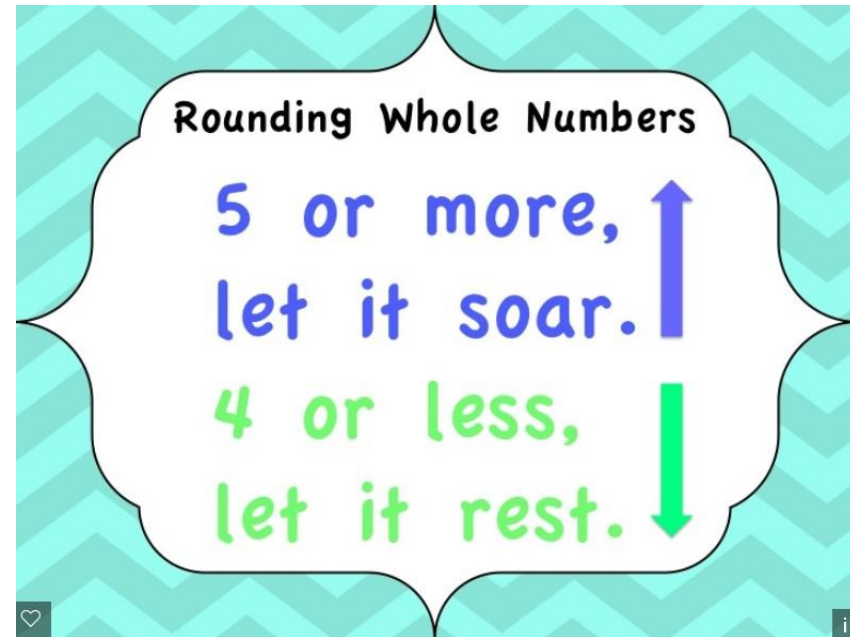
1 decimal place **6945.3728** - **6945.4**

Whole number **6945.3728** - **6945**

Ten **6945.3728** - **6950**

Hundred **6945.3728** - **6900**

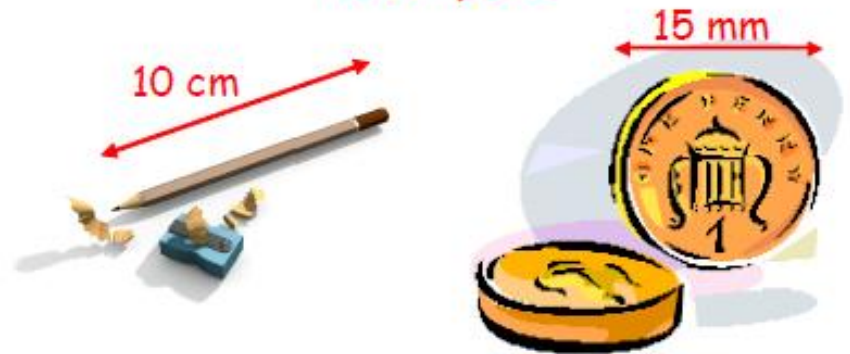
Thousand **6945.3728** - **7000**



# Equations

- Height and length  
mm, cm, m, km
- Area- covering of a surface  
mm<sup>2</sup>, cm<sup>2</sup>, m<sup>2</sup>, hectares
- Volume- measurement of the  
shape enclosed by a shape  
mm<sup>3</sup>, cm<sup>3</sup>, m<sup>3</sup>, ml or litres
- Weight  
Grams and kg

## Examples



The area of a football  
pitch is 7500 m<sup>2</sup>

Estimate the volume  
of liquid in the flask.

Answer: 100ml

