

PHYSICS 3U

MEASUREMENT IN SCIENCE

The Metric System

Measurements in science are based on the metric system.

- all units are multiples of 10
- larger units - multiply by a multiple of 10
- (move decimal place to the right)
- smaller units - divide by a multiple of 10
- (move decimal place to the left)
- PREFIX and BASE UNIT BASE UNITS: length - metre (m)
mass - gram (g)
time - second (s)
volume- litre (L)

Standard Prefixes:	G	$\times 10^9$
	M	$\times 10^6$
	k	$\times 10^3$
	da	$\times 10^1$
	(Base unit)	$\times 10^0$
	d	$\times 10^{-1}$
	c	$\times 10^{-2}$
	m	$\times 10^{-3}$
	μ	$\times 10^{-6}$
	n	$\times 10^{-9}$

SI units:	length	metre
	mass	kilogram
	time	second

Example: measurement of length ----> base unit is metre
kilometre is 1000 or 10^3 metre
centimetre is 0.01 or 10^{-2} metre

Express the following in metres:

- a) 25 km =
- b) 300 cm =
- c) 5 mm =
- d) 0.5 km =