

Unit 1: Measurement

Conversions and Formulae You Need to Know

Imperial System

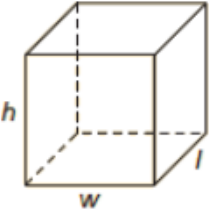
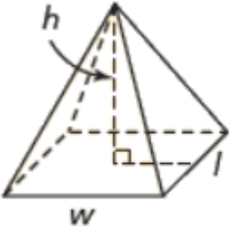
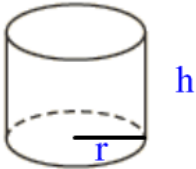
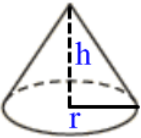
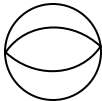
The inch is the smallest unit.
1 ft. = 12 in.
1 yd. = 3 ft. 1 yd. = 36 in.
1 mi. = 1760 yd. 1 mi. = 5280 ft.

Metric System

The mm (millimetre) is the smallest unit.
1 cm = 10 mm
1 m = 100 cm 1 m = 1000 mm
1 km = 1000 m

SI Unit to Imperial Unit	Imperial Unit to SI Unit
1 mm \doteq 0.04 in. (4/100)	1 in. = 2.54 cm 1 in. \doteq 2.5 cm
1 cm \doteq 0.4 in. (4/10)	1 ft. \doteq 30 cm 1 ft. \doteq 0.3m
1 m \doteq 39 in. 1 m = 3ft. 3in. 1 m = 3.25 ft.	1 yd. \doteq 90 cm 1 yd. \doteq 0.9 m
1km \doteq 0.6 mi. (6/10)	1 mi. \doteq 1.6 km

Surface Area

<u>Object</u>	<u>Surface Area</u>	<u>Lateral Area</u>
Right Rectangular Prism 	$SA = 2lw + 2lh + 2wh$	SA = Area of 4 faces without the top or bottom
Right Pyramid 	$SA = 4 \text{ triangular faces} + \text{base}$	4 triangular faces — where s = slant height and 4ℓ = perimeter of the base (Square base or regular polygon only)
Right Cylinder 	$SA = 2\pi rh + 2\pi r^2$	$A_L = 2\pi rh$
Right Cone 	$SA = \pi rs + \pi r^2$	$A_L = \pi rs$
Sphere 	$SA = 4\pi r^2$	NA

Volume

Object	Volume = Area of the base x height	Related Object
Prism	$V = lwh$	Pyramid $V = 1/3$ volume of a prism $V = 1/3 lwh$
Cylinder	$V = \pi r^2 h$	Cone $V = 1/3$ volume of a cylinder $V = 1/3 \pi r^2 h$
Sphere	$V = 4/3 \pi r^3$	Cylinder $V = 2/3$ volume of a cylinder

