

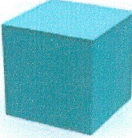

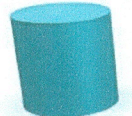


## MATH 10C FORMULA SHEET

### Metric & Imperial Conversion Factors

Relationships between Imperial Units	Approximate Relationships between Imperial Units and Metric Units	Relationships between Metric Units
1 mile = 1760 yards 1 mile = 5280 feet	1 mile = 1.609 km 1 km = 0.6214 miles	1 km = 1000 m
1 yard = 3 feet 1 yard = 36 inches	1 yard = 0.9144 m 1 m = 1.094 yd	1 m = 100 cm
1 foot = 12 inches	1 foot = 0.3048 m = 30.48 cm 1 m = 3.281 ft	1 cm = 10 mm
	1 inch = 2.54 cm 1 cm = 0.3937 in	

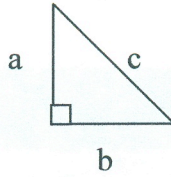
### Area, Surface Area and Volume Formulas

Area: Rectangle  $A = lw$       Triangle  $A = \frac{1}{2}bh$       Circle  $A = \pi r^2$

Shape	Shape	Volume	Surface Area
	Rectangular prism	$V = lwh$	$SA = 2(lw + lh + wh)$ or $SA = 2lw + 2lh + 2wh$
	Rectangular pyramid	$V = \frac{1}{3}lwh$	$SA = ws_1 + ls_2 + lw$
	Cylinder	$V = \pi r^2 h$	$SA = 2\pi rh + 2\pi r^2$
	Cone	$V = \frac{1}{3}\pi r^2 h$	$SA = \pi r^2 + \pi rs$
	Sphere	$V = \frac{4}{3}\pi r^3$ or $V = \frac{1}{6}\pi d^3$	$SA = 4\pi r^2$ or $SA = \pi d^2$

## Pythagorean Theorem

$$c^2 = a^2 + b^2$$



## Trigonometric Ratios

$$\sin A = \frac{\textit{opposite}}{\textit{hypotenuse}}$$

$$\cos A = \frac{\textit{adjacent}}{\textit{hypotenuse}}$$

$$\tan A = \frac{\textit{opposite}}{\textit{adjacent}}$$

## Exponent Laws

Exponent Law	Rule
Product of Powers	$x^m \times x^n = x^{m+n}$
Quotient of Powers	$\frac{x^m}{x^n} = x^{m-n}$
Power of a Power	$(x^m)^n = x^{mn}$
Power of a Product	$(xy)^m = x^m y^m$
Power of a Quotient	$\left(\frac{x}{y}\right)^m = \frac{x^m}{y^m}$
Zero Exponent	$x^0 = 1$
Negative Exponent	$x^{-m} = \frac{1}{x^m} \quad \frac{1}{x^{-m}} = x^m$
Fractional Exponent	$x^{\frac{m}{n}} = \sqrt[n]{x^m} \quad \text{or} \quad (\sqrt[n]{x})^m$

## Linear Functions

$$y = mx + b$$

$$Ax + By + C = 0$$

$$(y - y_1) = m(x - x_1)$$

$$\textit{slope} = \frac{\textit{rise}}{\textit{run}}$$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$