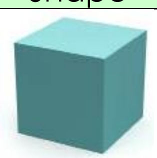
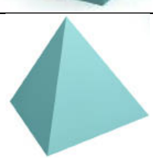
MATH 10C FORMULA SHEET

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	

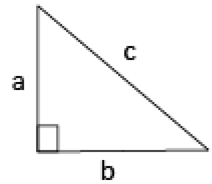
Area, Surface Area and Volume Formulas

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 $SA = 2lw + 2lh + 2wh$
	Right pyramid	$V = \frac{1}{3}lwh$	$SA = \frac{1}{2}(slant\ hgt)(perimeter\ of\ base) + (area\ of\ base)$
	Cylinder	$V = \pi r^2 h$	$SA = 2\pi rh + 2\pi r^2$
	Cone	$V = \frac{1}{3}\pi r^2 h$	$SA = \pi rs + \pi r^2$
	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

$$\sin A = \frac{opposite}{hypotenuse} \qquad \cos A = \frac{adjacent}{hypotenuse} \qquad \tan A = \frac{opposite}{adjacent}$$

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	$(x^m)^n = x^{m \times n}$
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	$x^{-m} = \frac{1}{x^m}$
Fractional Exponent	$x^{\frac{m}{n}} = \sqrt[n]{x^m} \quad or \quad \left(\sqrt[n]{x}\right)^m$

Linear Functions

$$slope = \frac{rise}{run} \qquad m = \frac{y_2 - y_1}{x_2 - x_1} \qquad slope = \frac{\Delta y}{\Delta x}$$

slope-intercept form $y = mx + b$

general form $Ax + By + C = 0$ slope-point form $(y - y_1) = m(x - x_1)$

standard form $Ax + By = C$