Mathematics 10C Formula Sheet

Measurement

Conversion Tables:

Linear
12 inches = 1 foot
3 feet = 1 yard
36 inches = 1 yard
1 760 yards = 1 mile

Mass
16 ounces = 1 pound
2000 pounds = 1 ton

Volume
2 cups = 1 pint
2 pints = 1 quart
4 quarts = 1 gallon

Prefix	Conversion Factor
kilo	0.001
hecto	0.01
deca	0.1
	1
deci	10
centi	100
milli	1 000

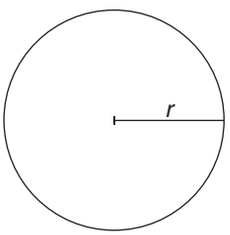
Capacity
1 imperial gallon = 4.546 litres
1 litre = 0.220 imperial gallons
1 US gallon = 3.79 litres
1 litre = 0.264 US gallons
1 cubic inch = 16.387 cubic centimetres
1 cubic centimetre = 0.061 cubic inches
1 cubic yard = 0.765 cubic metres
1 cubic metre = 1.308 cubic yards

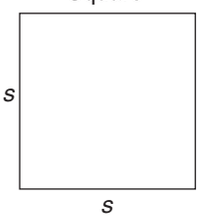
Length
1 inch = 2.54 centimetres
1 centimetre = 0.394 inches
1 foot = 0.305 metres
1 metre = 3.281 feet
1 yard = 0.914 metres
1 metre = 1.094 yards
1 mile = 1.609 kilometres
1 kilometre = 0.621 miles

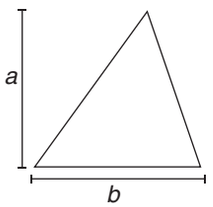
Mass
1 ounce = 28.350 grams
1 gram = 0.035 ounces
1 pound = 0.454 kilograms
1 kilogram = 2.205 pounds

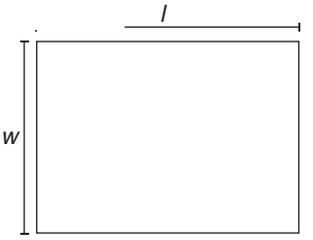
Surface Area and Volume

2-D Shapes:

Circle	
	$A_{circle} = \pi r^2$

Square	
	$A_{square} = s^2$

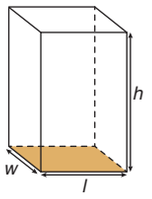
Triangle	
	$A_{triangle} = \frac{ab}{2}$

Rectangle	
	$A_{rectangle} = lw$

3-D Shapes:

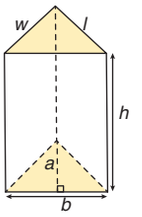
$SA_{\text{right rectangular prism}} = 2lw + 2hw + 2lh$

$V_{\text{right rectangular prism}} = lwh$



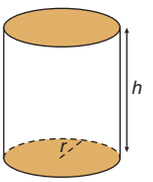
$SA_{\text{right triangular prism}} = bh + lh + wh + ab$

$V_{\text{triangular prism}} = \frac{1}{2}abh$



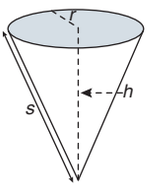
$SA_{\text{right cylinder}} = 2\pi r^2 + 2\pi rh$

$V_{\text{right cylinder}} = \pi r^2 h$



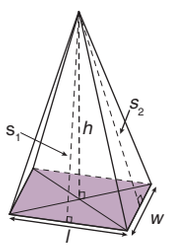
$SA_{\text{cone}} = \pi r^2 + \pi rs$

$V_{\text{right cone}} = \frac{1}{3}\pi r^2 h$



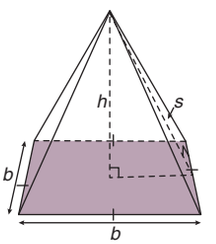
$SA_{\text{right rectangular pyramid}} = lw + 2\left(\frac{ls_1}{2}\right) + 2\left(\frac{ws_2}{2}\right)$

$V_{\text{right pyramid}} = \frac{1}{3}lwh$



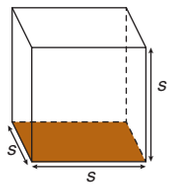
$SA_{\text{right square pyramid}} = 4\left(\frac{sb}{2}\right) + b^2$

$V_{\text{right pyramid}} = \frac{1}{3}b^2 h$



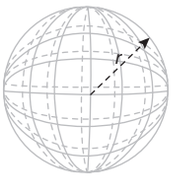
$SA_{\text{cube}} = 6s^2$

$V_{\text{cube}} = s^3$



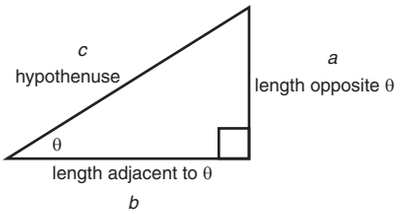
$SA_{\text{sphere}} = 4\pi r^2$

$V_{\text{sphere}} = \frac{4}{3}\pi r^3$



Trigonometry

Pythagorean Theorem: $a^2 + b^2 = c^2$



Trigonometric Ratios:

$\tan\theta = \dfrac{\text{length opposite } \theta}{\text{length adjacent to } \theta}$	$\cos\theta = \dfrac{\text{length adjacent to } \theta}{\text{hypotenuse}}$	$\sin\theta = \dfrac{\text{length opposite } \theta}{\text{hypotenuse}}$

Linear Equations

Slope of Line: $m = \dfrac{\text{rise}}{\text{run}}$ or $m = \dfrac{y_2 - y_1}{x_2 - x_1}$	Slope-Intercept Form: $y = mx + b$
General Form: $Ax + By + C = 0$	Slope-Point Form $y - y_1 = m(x - x_1)$