Math 10C Formulas

Conversion Table	
Imperial to Imperial	Imperial to SI (Metric)
12 inches (in) = 1 foot (ft)	2.54 cm = 1 in.
3 feet (ft) = 1 yard (rd)	
5280 feet (ft) = 1 mile (mi)	1.6 km = 1 mi.

Perimeter

Square $P = 4s$

Rectangle $P = 2\ell + 2w$

Circle Circumference $C = 2\pi r$ or $C = \pi d$

Area

Square $A = s^2$

Rectangle $A = bh$

Parallelogram $A = bh$

Triangle $A = \frac{1}{2}bh$

Circle $A = \pi r^2$

Surface Area

Right Pyramid

$SA = \frac{1}{2}s\left(\text{perimeter of base}\right) + \left(\text{base area}\right)$

Right Cylinder $SA = 2\pi r^2 + 2\pi rh$

Right Cone $SA = \pi r^2 + \pi rs$

Sphere $SA = 4\pi r^2$

Volume

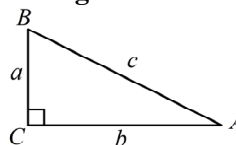Right Rectangular Prism $V = \ell wh$

Right Rectangular Pyramid $V = \frac{1}{3}\ell wh$

Right Cylinder $V = \pi r^2 h$

Right Cone $V = \frac{1}{3}\pi r^2 h$

Sphere $V = \frac{4}{3}\pi r^3$

Right Triangles

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

Trigonometry ratios

$$\sin \angle A = \frac{\text{opposite}}{\text{hypotenuse}}$$

$$\cos \angle A = \frac{\text{adjacent}}{\text{hypotenuse}}$$

$$\tan \angle A = \frac{\text{opposite}}{\text{adjacent}}$$

Exponent Laws

$$a^{\frac{1}{n}} = \sqrt[n]{a}$$

$$a^{\frac{m}{n}} = \sqrt[n]{a^m} \quad \text{or} \quad \left(\sqrt[n]{a}\right)^m$$

$$a^{-n} = \frac{1}{a^n}, \quad a \neq 0$$

$$a^m \cdot a^n = a^{m+n}$$

$$a^m \div a^n = a^{m-n}, \quad a \neq 0$$

$$\left(a^m\right)^n = a^{mn}$$

$$(ab)^m = a^m b^m$$

$$\left(\frac{a}{b}\right)^m = \frac{a^m}{b^m}, \quad b \neq 0$$

Coordinate Geometry

$$\text{Slope} = \frac{\text{rise}}{\text{run}} \quad \text{or} \quad \text{Slope} = \frac{y_2 - y_1}{x_2 - x_1}$$

Slope y-intercept form of a line:

$$y = mx + b$$

Slope point form of a line:

$$y - y_1 = m\left(x - x_1\right)$$

General form of a line:

$$Ax + By + C = 0$$