# Formula Sheet

## Area and Circumference

Trapezoid $\quad A = \left(\dfrac{b_1 + b_2}{2}\right)h$

Circle $\qquad C = 2\pi r$

$\qquad\qquad A = \pi r^2$

$A$ = area
$b$ = base
$h$ = height
$C$ = circumference
$r$ = radius

## Volume

Pyramid/Cone $\quad V = \dfrac{1}{3}Bh$

Sphere $\qquad\quad V = \dfrac{4}{3}\pi r^3$

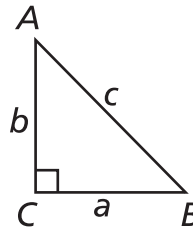$V$ = volume
$B$ = area of base
$h$ = height
$r$ = radius

## Pythagorean Theorem and Trigonometric Ratios

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

$\sin B = \dfrac{b}{c}$

$\cos B = \dfrac{a}{c}$

$\tan B = \dfrac{b}{a}$



## Points ($x_1$, $y_1$) and ($x_2$, $y_2$) in the Plane

Midpoint $\quad M = \left(\dfrac{x_1 + x_2}{2}, \dfrac{y_1 + y_2}{2}\right)$

Distance $\quad D = \sqrt{\left(x_2 - x_1\right)^2 + \left(y_2 - y_1\right)^2}$

## Quadratic Equations

Standard Form $\qquad ax^2 + bx + c = 0$

Quadratic Formula $\quad x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

## Combinations and Permutations

Combinations $\quad {}_kC_m = \dfrac{k!}{(k-m)!\,m!}$

Permutations $\quad {}_kP_m = \dfrac{k!}{(k-m)!}$

$k$ = number of objects in the set
$m$ = number of objects selected