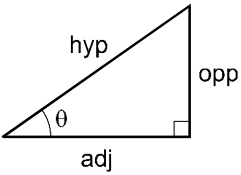


## SAMPLE MATHEMATICS FORMULAS

Formula	Description
$V = \frac{1}{3}Bh$	Volume of a pyramid
$V = \frac{1}{3}\pi r^2 h$	Volume of a cone
$V = \pi r^2 h$	Volume of a cylinder
$A = 4\pi r^2$	Surface area of a sphere
$V = \frac{4}{3}\pi r^3$	Volume of a sphere
$S_n = \frac{n}{2}[2a + (n-1)d] = n\left(\frac{a + a_n}{2}\right)$	Sum of an arithmetic series
$S_n = \frac{a(1 - r^n)}{1 - r}$	Sum of a geometric series
$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$	Distance formula
$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$	Midpoint formula
$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$	Slope
$s = r\theta$	Arc length
$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Quadratic formula
$y = mx + b$	Slope intercept form of line
$a^2 + b^2 = c^2$	Pythagorean theorem
$D = R \cdot T$	Distance
$\frac{n!}{r!(n-r)!}$	Combinations
$\frac{n!}{(n-r)!}$	Permutations

## FORMULAS (continued)

Formula	Description
 <p>A right-angled triangle with a horizontal base labeled 'adj', a vertical side labeled 'opp', and a hypotenuse labeled 'hyp'. The angle at the bottom-left vertex is labeled <math>\theta</math>. A small square at the bottom-right vertex indicates a right angle.</p> $\sin \theta = \frac{\text{opp}}{\text{hyp}}$ $\cos \theta = \frac{\text{adj}}{\text{hyp}}$ $\tan \theta = \frac{\text{opp}}{\text{adj}}$	