

## MATHEMATICS FORMULAS

Formula	Description
$V = \frac{1}{3} Bh$	Volume of a right cone and a pyramid
$V = Bh$	Volume of a cylinder and prism
$V = \frac{4}{3} \pi r^3$	Volume of a sphere
$A = 2\pi rh + 2\pi r^2$	Surface area of a cylinder
$A = 4\pi r^2$	Surface area of a sphere
$A = \pi r \sqrt{r^2 + h^2} = \pi r \ell$	Lateral surface area of a right cone
$S_n = \frac{n}{2} [2a + (n - 1)d] = \frac{n(a + a_n)}{2}$	Sum of an arithmetic series
$S_n = \frac{a(1 - r^n)}{1 - r}$	Sum of a finite geometric series
$\sum_{n=0}^{\infty} ar^n = \frac{a}{1 - r},  r  < 1$	Sum of an infinite geometric series
$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$	Law of sines
$c^2 = a^2 + b^2 - 2ab \cos C$	Law of cosines
$(x - h)^2 + (y - k)^2 = r^2$	Equation of a circle
$(y - k) = 4c(x - h)^2$	Equation of a parabola
$\frac{(x - h)^2}{a^2} + \frac{(y - k)^2}{b^2} = 1$	Equation of an ellipse
$\frac{(x - h)^2}{a^2} - \frac{(y - k)^2}{b^2} = 1$	Equation of a hyperbola