



Equation of a line

Standard form	$Ax + By + C$	<ul style="list-style-type: none"> • A, B, C are real numbers. • $A \geq 0$ A and B are not both zero.
Slope- intercept form	$y = mx + b$	$m = \text{slope}, b = y - \text{intercept}$
Point -Slope form	$y - y_1 = m(x - x_1)$	
Slope	$m = \frac{y_2 - y_1}{x_2 - x_1}$	(x_1, y_1) and (x_2, y_2) are 2 points

Quadratics

Standard form of a quadratic equation	$ax^2 + bx + c = 0$	a, b and c are constants where $a \neq 0$
Quadratic formula	$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	

Coordinate Geometry

Midpoint	$M = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$	(x_1, y_1) and (x_2, y_2) are 2 points
Distance formula	$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$	

Area, Volume, and Surface Area of Polygon and Solids

Triangle	$A = \frac{1}{2}bh$	$A = \text{Area}$
Parallelogram	$A = bh$	$b = \text{base}$
Trapezoid	$A = \frac{1}{2}(b_1 + b_2)h$	$h = \text{height}$
Regular Polygon	$A = \frac{1}{2}ap$	$a = \text{apothom}$
Prism	$V = Bh$	$p = \text{Perimeter}$
Regular Prism	$SA = 2B + Ph$	$V = \text{Volume}$
Circular Cylinder	$V = \pi r^2 h$	$B = \text{Area of base}$
Right Circular Cylinder	$SA = 2\pi r^2 + 2\pi rh$	$SA = \text{Surface Area}$
Pyramid	$V = \frac{1}{3}Bh$	$P = \text{Perimeter of base}$
Right Pyramid	$SA = B + \frac{1}{2}Pl$	$r = \text{radius}$
Circular cone	$V = \frac{1}{3}\pi r^2 h$	$l = \text{slant height}$
Right Circular Cone	$SA = \pi r^2 + \pi rl$	$\pi = 3.142$
Sphere	$V = \frac{4}{3}\pi r^3$ $SA = 4\pi r^2$	

Angles of Polygon		
Sum of Degree Measures of the interior Angles of a Polygon	$180(n - 2)$	$n = \text{number of sides}$
Degree Measures of an interior Angle of a Regular Polygon	$\frac{180(n - 2)}{n}$	
Circles		
Equation of a circle	$(x - h)^2 + (y - k)^2 = r^2$	<i>center (h, k)</i> <i>r = radius</i> <i>A = Area</i> <i>C = circumference</i> <i>d = diameter</i> <i>$\pi = 3.142$</i>
Area formula	$A = \pi r^2$	
Circumference Formula	$C = 2\pi r = \pi d$	
Area of a sector with central angle θ	$A = \frac{\theta}{360} \pi r^2$	
Right Triangles		
Pythagorean Theorem	$a^2 + b^2 = c^2$	
Right Triangle Trigonometry	$\sin A = \frac{a}{c}$ $\cos A = \frac{b}{c}$ $\tan A = \frac{a}{b}$	
Sequences		
Arithmetic Sequence	$a_n = a_1 + (n - 1)d$	$a_n = n^{\text{th}} \text{ term}$ <i>n = number of terms</i> <i>d = common difference</i>
Geometric Sequence	$a_n = a_1 \times r^{(n-1)}$	<i>r = common ratio</i>
Interest		
Simple interest	$I = Prt$	<i>r = rate</i> <i>t = time</i> <i>I = interest</i> <i>P = Principle</i>
Compound Interest	$A = P \left(1 + \frac{r}{n}\right)^{nt}$	<i>A = Amount of money after t years</i> <i>n = number of times interest is compounded annually</i>

Miscellaneous

Distance, Rate, Time	$D = rt$	$D = \text{distance}$ $r = \text{rate}$ $t = \text{time}$
Direct Variation (y varies directly with x)	$y = kx$	$k = \text{variation constant}$
Inverse Variation (y varies indirectly with x)	$y = \frac{k}{x}$	

Key to Symbols

- ΔABC Triangle ABC
- $\angle ABC$ Angle ABC
- $m\angle ABC$ measure of Angle ABC
- \overleftrightarrow{AB} Line AB
- \overline{AB} Line segment AB
- AB length of line segment AB
- Circle O Circle with centre O
- \widehat{AB} Arc AB
- \perp is perpendicular to
- \parallel is parallel to
- \cong is congruent to
- \sim is similar to
- \approx is approximately equal