



## Grade 9 Mathematics Formula Sheet

Below are formulas you may find useful as you work the problems. However, some of the formulas may not be needed. You may refer to this page as you take the test.

Slope of a Line	$m = \frac{y_2 - y_1}{x_2 - x_1}$	Arithmetic Sequence (Recursive)	$a_n = a_{n-1} + d$
Linear Equations	$y = mx + b$	Arithmetic Sequence (Explicit)	$a_n = a_1 + (n - 1)d$
Linear Equations	$y - y_1 = m(x - x_1)$	Arithmetic Series	$S_n = \frac{n}{2}(a_1 + a_n)$ <p style="text-align: center;">or</p> $S_n = \frac{n}{2}[2a_1 + (n - 1)d]$
Linear Equations	$Ax + By = C$	Geometric Sequence (Recursive)	$a_n = r(a_{n-1})$
Quadratic Equations	$y = ax^2 + bx + c$	Geometric Sequence (Explicit)	$a_n = a_1 \cdot r^{(n-1)}$
Quadratic Equations	$y = a(x - h)^2 + k$	Geometric Series	$S_n = \frac{a_1(1 - r^n)}{1 - r}$ ; where $r \neq 1$
Quadratic Equations	$y = a(x - p)(x - q)$	Exponential Growth/Decay	$y = ab^x$
Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$		