



## Grades 9 Mathematics Formula Sheet

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

Slope of a Line	$m = \frac{y_2 - y_1}{x_2 - x_1}$
Linear Equations	$y = mx + b$
Linear Equations	$y - y_1 = m(x - x_1)$
Linear Equations	$Ax + By = C$
Quadratic Equations	$y = ax^2 + bx + c$
Quadratic Equations	$y = a(x - h)^2 + k$
Quadratic Equations	$y = a(x - p)(x - q)$
Quadratic Formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

Arithmetic Sequence (Recursive)	$a_n = a_{n-1} + d$
Arithmetic Sequence (Explicit)	$a_n = a_1 + (n - 1)d$
Arithmetic Series	$S_n = \frac{n}{2}(a_1 + a_n) \text{ or}$ $S_n = \frac{n}{2}[2a_1 + (n - 1)d]$
Geometric Sequence (Recursive)	$a_n = r(a_{n-1})$
Geometric Sequence (Explicit)	$a_n = a_1 \cdot r^{(n-1)}$
Geometric Series	$S_n = \frac{a_1(1 - r^n)}{1 - r}; \text{ where } r \neq 1$
Exponential Growth/Decay	$y = ab^x$