Georgia Milestones Assessment System

Algebra 1 Formula Sheet

Below are the 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.

Linear Formulas

Slope Formula

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Linear Equations

Slope-intercept Form: $y = mx + b$

Point-slope Form: $y - y_1 = m(x - x_1)$

Standard Form: $Ax + By = C$

Arithmetic Sequence Formulas

Recursive: $a_n = a_{n-1} + d$

Explicit: $a_n = a_1 + (n - 1)d$

Exponential Formulas

Exponential Equation

$y = ab^x$

Geometric Sequence Formulas

Recursive: $a_n = r(a_{n-1})$

Explicit: $a_n = a_1 \cdot r^{n-1}$

Compound Interest Formula

$$A = P\left(1 + \frac{r}{n}\right)^{nt}$$

Quadratic Formulas

Quadratic Equations

Standard Form: $y = ax^2 + bx + c$

Vertex Form: $y = a(x - h)^2 + k$

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Average Rate of Change

The change in the y-value divided by the change in the x-value for two distinct points on a graph.

Statistics Formulas

Mean

$$\overline{x} = \frac{x_1 + x_2 + x_3 + \ldots + x_n}{n}$$

Interquartile Range

$IR = Q_3 - Q_1$

The difference between the first quartile and third quartile of a set of data.

Mean Absolute Deviation

$$\frac{\sum_{i=1}^{n} \left| x_i - \overline{x} \right|}{n}$$

The sum of the distances between each data value and the mean, divided by the number of data values.