

MATH 0300 BEGINNING ALGEBRA FORMULA SHEET

Geometric Formulas

Area of a Rectangle: $A = lw$

Perimeter of a Rectangle: $P = 2l + 2w$

Area of a Triangle: $A = \frac{1}{2}bh$

Linear Formulas

Slope of a Line: $m = \frac{y_2 - y_1}{x_2 - x_1}$, where $x_2 \neq x_1$

Standard Form: $Ax + By = C$

Vertical Line: $x = k$

Horizontal Line: $y = b$

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

Rules for Exponents

Zero Exponent: $b^0 = 1$, for $b \neq 0$

The Product Rule: $a^m \cdot a^n = a^{m+n}$

Power to a Power: $(a^m)^n = a^{m \cdot n}$

Product to a Power: $(ab)^n = a^n b^n$

Quotient to a Power: $\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$, for $b \neq 0$

Negative Exponents: $a^{-n} = \frac{1}{a^n}$; $\frac{1}{a^{-n}} = a^n$; $\frac{a^{-n}}{b^{-m}} = \frac{b^m}{a^n}$; $\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$

Quotient Rule: $\frac{a^m}{a^n} = a^{m-n}$