MATH 0300 BEGINNING ALGEBRA FORMULA SHEET

$$A = lw$$

$$P = 2l + 2w$$

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

$$Ax + By = C$$

$$x = k$$

$$y = b$$

$$y = mx + b$$

$$y - y_1 = m(x - x_1)$$

$$a(b \pm c) = ab \pm ac$$

$$f(x) = mx + b$$

$$f(x) = b$$

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

$$b^0 = 1$$

$$f(x) = ax^2 + bx + c$$

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

$$h = -\frac{b}{2a}, k = f\left(-\frac{b}{2a}\right)$$

$$f(x) = \frac{p(x)}{q(x)}$$

$$f(x) = |x|$$

$$(f \pm g)(x) = f(x) \pm g(x)$$

$$(fg)(x) = f(x)g(x)$$

$$\left(\frac{f}{g}\right)(x) = \frac{f(x)}{g(x)}, g(x) \neq 0$$

$$b^0 = 1, for\ b \neq 0$$

$$a^m \cdot a^n = a^{m+n}$$

$$\frac{a^m}{a^n} = a^{m-n}$$

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

$$(ab)^n = a^n b^n$$

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

$$a^{-n} = \frac{1}{a^n}; \frac{1}{a^{-n}} = a^n$$

$$\frac{a^{-n}}{b^{-m}} = \frac{b^m}{a^n};$$

$$\left(\frac{a}{b}\right)^{-n} = \left(\frac{b}{a}\right)^n$$

$$a^{\frac{1}{n}} = \sqrt[n]{a}, a^{-\frac{1}{n}} = \frac{1}{\sqrt[n]{a}}, a \neq 0$$

$$a^{\frac{m}{n}} = \sqrt[n]{a^m} = (\sqrt[n]{a})^m$$

$$\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{a \cdot b}$$

$$\sqrt[n]{\frac{a}{b}} = \frac{\sqrt[n]{a}}{\sqrt[n]{b}}$$

$$\sqrt{a} = b\ if\ b^2 = a\ and\ b \geq 0$$

$$If\ x^n = a, then\ a = \sqrt[n]{a}$$