

**Math 1301 College Algebra**  
**Some Useful Formulas**

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

$$y = mx + b$$

$$Ax + By = C$$

$$\frac{c_2 - c_1}{c_1} \cdot 100\%$$

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

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

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

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

$$\log_a x = k \text{ means } x = a^k$$

$$\log_a 1 = 0, \log_a a = 1$$

$$\log_a M + \log_a N = \log_a MN$$

$$\log_a M - \log_a N = \log_a \frac{M}{N}$$

$$\log_a M^r = r \cdot \log_a M$$

$$\log_a a^x = x, a^{\log_a x} = x$$

$$\log_a x = \frac{\log_b x}{\log_b a}$$