MATH 1300 COURSE FORMULAS

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

$$y = mx + b$$

$$ax + b = 0$$

$$Ax + By = C$$

$$y = b, x = k$$

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

$$f(x) = b$$

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

$$b^0 = 1$$

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

$$(a^m)^n = a^{mn}$$

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

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

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

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

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

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

$$If \ a^2 = b, then \ a = \pm\sqrt{b}$$

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

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

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

$$y = x^2 \pm k; \ \ y = (x \pm h)^2$$

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

$$f(x) = Ca^x$$

$$(a + b)(a - b) = a^2 + b^2$$

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

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

$$f(x) = Ca^x$$

$$f(x) = e^x$$

$$A = C(1 + r)^x$$

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

$$If \ \log_a x = b, then \ x = a^b$$

$$If \ y = a^x, then \ \log_a y = x$$

$$\log_a a^x = x$$

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

$$\log_a b^x = x \log_a b$$