

College Algebra -- Formulas for 2009-2010 Common Final

The following formulas will be available on the Final. You should know very well how to use them.

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

$$y = mx + b$$

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

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

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

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

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

$$s_n = \frac{n}{2}(a_1 + a_n)$$

$$P = P_0 e^{kt}$$

$$a_n = a_1 r^{n-1}$$

$$S_n = \frac{a_1(1-r^n)}{1-r}$$

$$S = \frac{a_1}{1-r}$$

Below is a list of most (not necessarily all) of the formulas that might be needed on the final that will not be supplied – if you need any formula besides those above, you must know it.

$$\log_a x = y \Leftrightarrow a^y = x$$

$$\log_a a^M = M$$

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

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

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

$$\log_a M = \log_a N \Leftrightarrow M = N$$

$$T \times k = \ln 2$$

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

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

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

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

$$\frac{y^2}{a^2} + \frac{x^2}{b^2} = 1$$

$$c^2 = a^2 - b^2$$

$$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$$

$$\frac{y^2}{a^2} - \frac{x^2}{b^2} = 1$$

$$c^2 = a^2 + b^2$$