Sheet#674: Algebra, Graphs, and Trigonometry Formulas

v. 2

Radians and Degrees

$$\theta_{\text{deg}} = \frac{180^\circ}{\pi}\theta_{\text{rad}}$$

$$\theta_{\text{rad}} = \frac{\pi}{180^\circ}\theta_{\text{deg}}$$

Arclength

$$s = r\,\theta_{\text{rad}}$$

Circular Functions
Polar and Cartesian coordinates

$$\sin\theta = \frac{y}{r}\ \cos\theta = \frac{x}{r}\ \tan\theta = \frac{y}{x}$$

$$r = \sqrt{x^2 + y^2}$$

$$\theta = \tan^{-1}\left(\frac{y}{x}\right)$$

Master formula

$$y = \pm A\sin(B(t-h)) + k$$

$$B = \frac{2\pi}{T} = \frac{360^\circ}{T}$$

$$T = \frac{2\pi}{B} = \frac{360^\circ}{B}$$

f = "regular" frequency (oscillations/second).

$$f = 1/T$$

Quadratic Formula

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

Circles / Distance Formula

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

Logarithms

$$\log xy = \log x + \log y$$

$$\log x^n = n \cdot \log x$$