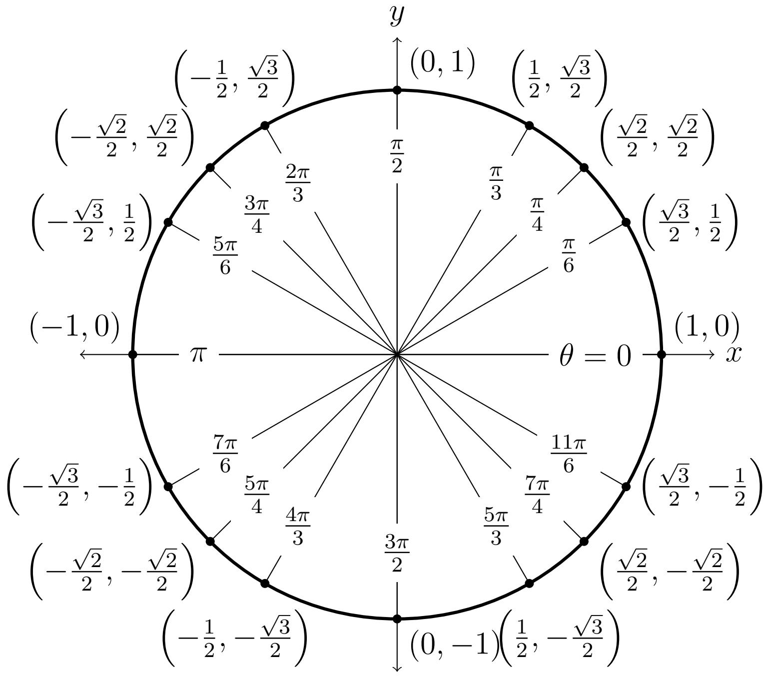
Unit circle: The coordinates of the endpoints satisfy $(x, y) = (\cos\theta, \sin\theta)$, for corresponding angle θ.



Common Maclaurin series:

$$\frac{1}{1-x} = \sum_{n=0}^{\infty} x^n \qquad R = 1$$

$$e^x = \sum_{n=0}^{\infty} \frac{x^n}{n!} \qquad R = \infty$$

$$\sin x = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)!} \qquad R = \infty$$

$$\cos x = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n}}{(2n)!} \qquad R = \infty$$

$$\arctan(x) = \tan^{-1} x = \sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{2n+1} \qquad R = 1$$

$$\ln(1+x) = \sum_{n=1}^{\infty} (-1)^{n-1} \frac{x^n}{n} \qquad R = 1$$

Integral Formulas for a Parametric Curve:

$x = x(t), y = y(t)$

Area underneath the curve from $t = a$ to $t = b$:

$$\int_a^b y(t) \frac{dx}{dt} dt$$

Arc length of the curve from $t = a$ to $t = b$:

$$\int_a^b \sqrt{\left(\frac{dx}{dt}\right)^2 + \left(\frac{dy}{dt}\right)^2} dt$$

Integral Formulas for a Polar Curve:

$r = f(\theta)$

Area bounded by the curve and rays $\theta = a$ to $\theta = b$:

$$\int_a^b \frac{1}{2}[f(\theta)]^2 d\theta$$

Arc length of the curve from $\theta = a$ to $\theta = b$:

$$\int_a^b \sqrt{(f(\theta))^2 + (f'(\theta))^2} d\theta$$