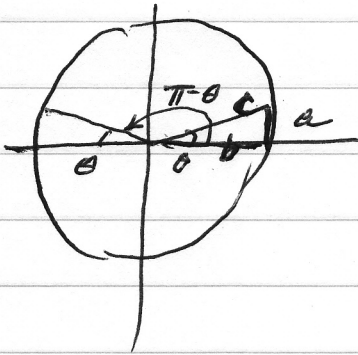


Review Math -

1. Trig fun -

$$\sin \theta = \frac{a}{c}, \quad \cos \theta = \frac{b}{c}$$



$$\sin(\pi - \theta) = \sin \theta, \quad \cos(\pi - \theta) = -\cos \theta$$

$$\tan \theta = \frac{a}{b} = \frac{\sin \theta}{\cos \theta}$$

2. Derivatives:

$$\frac{d \sin \theta}{d \theta} = \cos \theta, \quad \frac{d \cos \theta}{d \theta} = -\sin \theta$$

$$\frac{d \tan \theta}{d \theta} = \frac{d(\sin \theta / \cos \theta)}{d \theta} = \frac{\cos \theta \frac{d \sin \theta}{d \theta} - \sin \theta \frac{d \cos \theta}{d \theta}}{\cos^2 \theta}$$

$$= \frac{\cos^2 \theta + \sin^2 \theta}{\cos^2 \theta} = \frac{1}{\cos^2 \theta} = \frac{1}{\cos^2 \theta} = \frac{1}{\cos^2 \theta}$$

3. Integration:

$$\int_{\theta_1}^{\theta_2} \sin \theta d\theta = \int_{\theta_1}^{\theta_2} d(-\cos \theta) = -\cos \theta \Big|_{\theta_1}^{\theta_2} = \cos \theta_1 - \cos \theta_2$$

$$\int_{x_1}^{x_2} \frac{1}{x^2} dx = -\frac{1}{x} \Big|_{x_1}^{x_2} = \frac{1}{x_1} - \frac{1}{x_2}$$