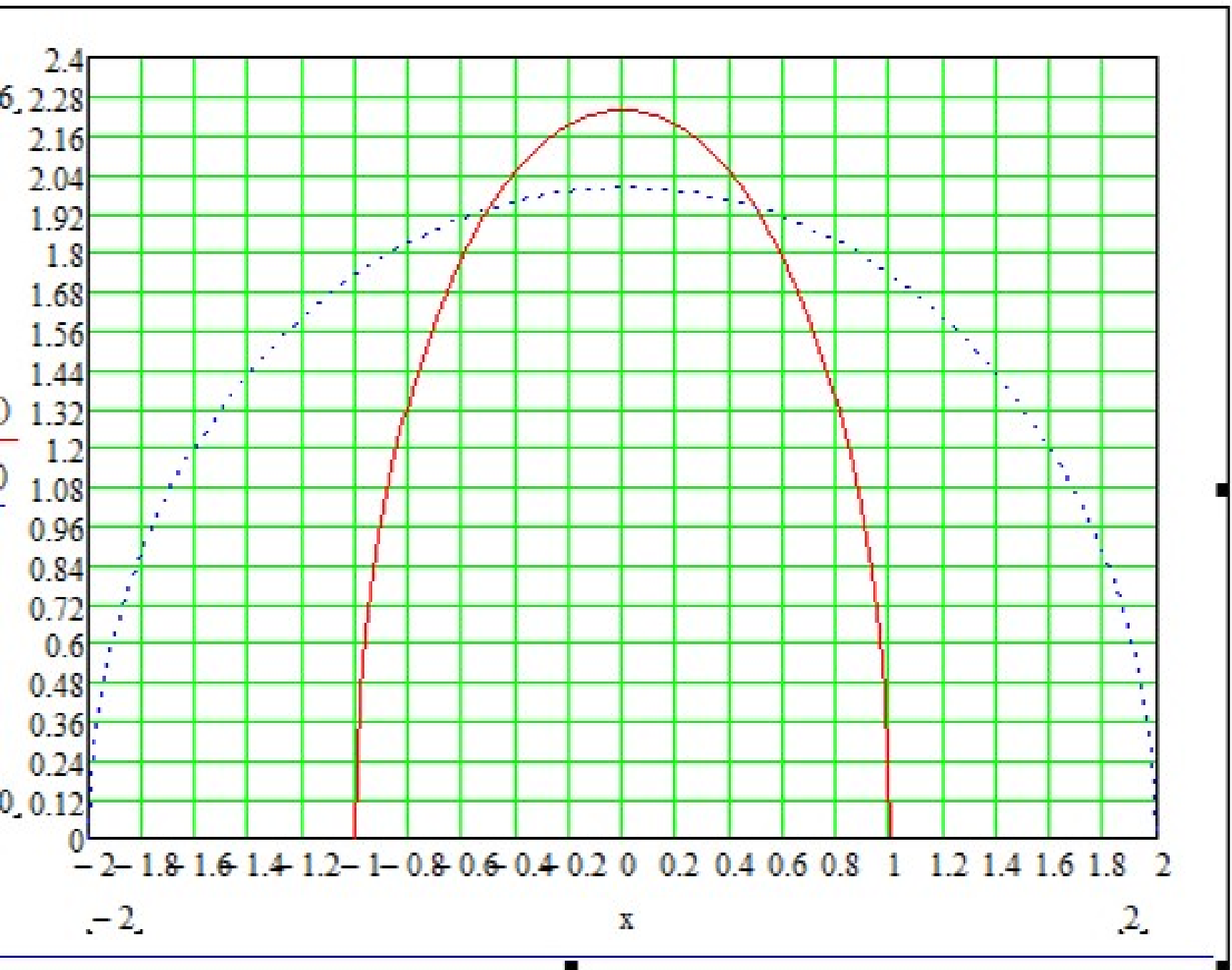


$f(x) := \sqrt{5 - 5x^2}$

$g(x) := \sqrt{4 - x^2}$



Math homework

$$5x^2 + y^2 = 5 \quad (1)$$

$$x^2 + y^2 = 4 \quad (2)$$

$$y^2 = 4 - x^2$$

putting y^2 into eqn

$$5x^2 + 4 - x^2 = 5$$

$$4x^2 + 4 - 5 = 0$$

$$4x^2 - 1 = 0$$

$$4x^2 = 1$$

$$x^2 = \frac{1}{4}$$

$$x = \pm \frac{1}{2}$$

using $x = \frac{1}{2}$ because we get the positive

$$\left(\frac{1}{2}\right)^2 + y^2 = 4$$

$$\frac{1}{4} + y^2 = 4$$

$$y^2 = 4 - \frac{1}{4}$$

$$y^2 = 3.75$$

$$y = 1.936$$

$$\frac{dy}{dx} = 5x^2 + y^2 = 5$$

$$10x + 2y \frac{dy}{dx} = 0$$

$$2y \frac{dy}{dx} = -10x$$

$$\frac{dy}{dx} = -\frac{10x}{2y}$$

$$\text{put } x = 0.5 \quad y = 1.936$$

$$\frac{dy}{dx} = -\frac{5(0.5)}{1.936} = -\frac{2.5}{1.936}$$

$$\text{eqn } -1.2913 = -52.25''$$

$$\frac{dy}{dx} = x^2 + y^2 = 4$$

$$2x + 2y \frac{dy}{dx} = 0$$

$$2y \frac{dy}{dx} = -2x$$

$$\frac{dy}{dx} = -\frac{x}{y}$$

$$\text{put } x = 0.5, y = 1.936$$

$$\frac{dy}{dx} = -\frac{0.5}{1.936}$$

$$= -0.2583$$

$$\tan^{-1}(-0.2513) = -14.48$$

∴ the total angle

$$\begin{aligned}\theta_2 - \theta_1 &= -14.48 - -52.5 \\ &= 38.02^\circ\end{aligned}$$