

Name: Anudike Somtochukwu farouk
 Matric No: 181ENG011003
 Course: ENG281

$$\begin{aligned} \textcircled{1} \quad 5x^2 + y^2 &= 5 \\ x^2 + y^2 &= 4 \\ 4x^2 &= 1 \\ x^2 &= \frac{1}{4} \\ x &= \pm 0.5 \end{aligned}$$

$$\begin{aligned} \theta_2 &= |\theta_1 - \theta_2| \\ \theta &= |\theta_1 - \theta_2| \\ &= |-52.32 - (-14.52)| \\ \theta &= \frac{37.8}{3} \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad 5x^2 + y^2 &= 5 \\ 5(0.5)^2 + y^2 &= 5 \\ \frac{5}{4} + y^2 &= 5 \\ y^2 &= 5 - \frac{5}{4} \\ y &= \pm \sqrt{\frac{15}{4}} \\ y &= \pm 1.93 \quad x = \pm 0.5 \end{aligned}$$

Find the dy/dx of equ $\textcircled{1}$ and $\textcircled{2}$

$$\begin{aligned} \textcircled{1} \quad 5x^2 + y^2 &= 5 \\ \frac{dy}{dx} &= \frac{-10x}{2y} = \frac{-10(0.5)}{2(1.93)} = -1.295 \end{aligned}$$

$$\begin{aligned} \textcircled{2} \quad x^2 + y^2 &= 4 \\ \frac{dy}{dx} &= \frac{-2x}{2y} = \frac{-2(0.5)}{2(1.93)} = -0.25 \end{aligned}$$

Since $\frac{dy}{dx} = \tan \theta$

$$\theta = \tan^{-1} \left(\frac{dy}{dx} \right)$$

$$\theta = \tan^{-1}(-1.295)$$

$$\theta = -52.32$$

$$\theta_2 = \tan^{-1}(-0.25)$$

$$\theta_2 = -14.52$$

Normal Arial 10 B I U [Formatting icons]

$f(x) := \sqrt{5 - 5x^2}$ $g(x) := \sqrt{4 - x^2}$

