Yilkucfi Kangrot Nengak
18/ENG02/109
Computer Engineering.

By plotting the curves given in equations ① and ② to show the angles between them at their points of intersections with the end of MATHCAD. find the magnitude of the angle for which x and y are positive.

$5x^2 + y^2 = 5$.

$x^2 + y^2 = 4$.

Solu.

$5x^2 + y^2 = 5$

$x^2 + y^2 = 4$.

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

$4x^2 = 1$

$x^2 = 1/4$

$x = \sqrt{1/4}$

$x = 0.5$

$5x^2 + y^2 = 5$

$5(0.5)^2 + y^2 = 5$

$1.25 + y^2 = 5$

$y^2 = 5 - 1.25$

$y^2 = 3.75$

$y = \sqrt{3.75}$

$y = 1.94$.

$5x^2 + y^2 = 5$.

$10x\, dx/dx + 2y\, dy/dx = 0$.

$10x + 2y\, dy/dx = 0$

$2y\, dy/dx = -10x$

$$\frac{dy}{dx} = -\frac{5x}{y}$$

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

$$-5x = \tan\theta$$

$$\frac{-5(0.5)}{1.94} = \tan\theta$$

$$\theta = -52.19^\circ$$

$$x^2 + y^2 = 9$$

$$2x\, dx/dx + 2y\, dy/dx = 0$$

$$2x + 2y\, dy/dx = 0$$

$$2y\, dy/dx = -2x$$

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

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

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

$$= \frac{-0.5}{1.94} = \tan\theta$$

$$\theta = -14.45^\circ$$

$$\theta_2 - \theta_1 = (-14.45^\circ) - (-52.19^\circ)$$

$$= 37.74^\circ$$