

$$5x^2 + y^2 = 5, \quad x^2 + y^2 = 4$$

$$y^2 = 5 - 5x^2, \quad y^2 = 4 - x^2$$

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

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

$$1 = 4x^2$$

$$x_1 = 1/2, \quad x_2 = -1/2$$

$$J_1^2 = 5 - 5x^2$$

$$J_2^2 = 5 - 5x^2$$

$$J_1 = \sqrt{5 - 5x^2}$$

$$J_2 = \sqrt{5 - 5x^2}$$

$$= \sqrt{5 - 5(1/2)^2}$$

$$= \sqrt{5 - 5(-1/2)^2}$$

$$= 1.94$$

$$= 1.94$$

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

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

$$\frac{dy}{dx} = \frac{-10(0.5)}{2(1.94)}$$

$$\frac{dy}{dx} = -1.29$$

$$\theta = \tan^{-1}(-1.29)$$

$$\theta_1 = 52.22$$

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

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

$$\frac{dy}{dx} = \frac{-2(0.5)}{2(1.94)}$$

$$= -0.26$$

$$\therefore \theta_2 = \tan^{-1}(-0.26)$$

$$= -14.57^\circ$$

$$\text{The Total angle} = \theta_2 - \theta_1$$

$$= -14.57 - 52.22$$

$$\approx -37.65$$

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

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

