$$x^2 + 4y^2 = 1 \implies \frac{d}{dx}x^2 + \frac{d}{dx}4y^2 = 0$$

$$\implies 2x + 8y \cdot \frac{dy}{dx} = 0 \implies 8y \cdot \frac{dy}{dx} = -2x$$

$$\implies \frac{dy}{dx} = \boxed{-\frac{x}{4y}}$$