Tangents to Parametrically Defined Curves

- Find the equation of the tangent to $F(t) = (\cos t, 2\sin^2 t)$ at the point where $t = \pi/3$

★ $\frac{dx}{dt} = -\sin t$ ★ $\frac{dy}{dt} = 4\sin t \cos t$

$$\frac{dy}{dx} = \frac{4\sin t \cos t}{-\sin t} = -4\cos t$$

★ $x = 1/2$ -

★ $y = 2\left(\sqrt{3}/2\right)^2 = \frac{3}{2}$ -

★ $\frac{dy}{dx} = -2$ -

$$y - 3/2 = -2\left(x - \tfrac{1}{2}\right)$$

or

$$4x + 2y = 5$$