3. $\frac{dy}{dx}(x^4 + y^4 = 12xy)$

$= 4x^3 + 4y^3 \cdot y(d/dx) = 12\left(x\frac{dy}{dx} + y\right)$

$= 4x^3 + 4y^3 \cdot \frac{dy}{dx} = 12x\frac{dy}{dx} + 12y$

group like terms

$= 4y^3\left(\frac{dy}{dx}\right) - 12x\left(\frac{dy}{dx}\right) = 12y - 4x^3$

$= \frac{dy}{dx}(4y^3 - 12x) = 12y - 4x^3$

$\frac{4y^3 - 12x}{4y^3 - 12x}$

Solve for $\frac{dy}{dx}$

$\frac{dy}{dx} = \frac{12y - 4x^3}{4y^3 - 12x}$