Given $x^2y + y^2 = 2x$, differentiate with respect to t.

Steps: 1) Find each variable's derivative. 2) Instead of attaching $\frac{dy}{dx}$ to y's derivative, now you will attach $\frac{dx}{dt}$ to x's derivative and $\frac{dy}{dt}$ to y's derivative.

* apply product rule, implicit differentiation

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

$$2x\left(\frac{dx}{dt}\right)y + x^2(1)\left(\frac{dy}{dt}\right) + 2y\left(\frac{dy}{dt}\right) = 2\left(\frac{dx}{dt}\right)$$

Answer