1. Find $\dfrac{dy}{dx}$ implicit differentiation, if $y^3 + 3xy = x^5$.

$$\begin{aligned}
\frac{d}{dx}\left(y^3 + 3xy\right) &= \frac{d}{dx}\left(x^5\right) \\
\frac{d}{dx}\left(y^3\right) + \frac{d}{dx}\left(3xy\right) &= \frac{d}{dx}\left(x^5\right) \\
3y^2 \cdot \frac{dy}{dy} + \left(3x \cdot \frac{d}{dx}\, y + y \cdot \frac{d}{dx}\, 3x\right) &= 5x^4 \\
3x^2 + \left(3x \cdot \frac{dy}{dx} + y \cdot 3\right) &= 5x^4 \\
3y^2\frac{dy}{dx} + 3x\frac{dy}{dx} + 3y &= 5x^4 \\
(3y^2 + 3x)\frac{dy}{dx} &= 5x^4 - 3y \\
\frac{dy}{dx} &= \frac{5x^4 - 3y}{3y^2 + 3x}
\end{aligned}$$

2. Find $\dfrac{dy}{dx}$ implicit differentiation, if $\sin(x^2y) = 2x$.

$$\begin{aligned}
\frac{d}{dx}\left(\sin(x^2y)\right) &= \frac{d}{dx}\left(2x\right) \\
\cos(x^2y) \cdot \frac{d}{dx}\left(x^2y\right) &= 2 \\
\cos(x^2y) \cdot \left(x^2\frac{d}{dx}\, y + y\frac{d}{dx}\, x^2\right) &= 2 \\
\cos(x^2y) \cdot \left(x^2\frac{dy}{dx} + 2xy\right) &= 2 \\
x^2\cos(x^2y)\frac{dy}{dx} + 2xy\cos(x^2y) &= 2 \\
x^2\cos(x^2y)\frac{dy}{dx} &= 2 - 2xy\cos(x^2y) \\
\frac{dy}{dx} &= \frac{2 - 2xy\cos(x^2y)}{x^2\cos(x^2y)}
\end{aligned}$$