# Explicit Differentiation Practice

For each of the functions below find their respective derivatives.

$47 + 3e^{3x^2-x}$

$$\frac{x^2+7x}{\sqrt{x^3-5}}$$

$\sin^5(x)\sqrt{x^3-5}$

$\sqrt{47+3e^{3x^2-x}}$

# Implicit Differentiation Practice

1. Assume that $y$ is a function of $x$. Find $\frac{dy}{dx}$ in the following:

   (a) $y\cos(x) = x^2 + y^2$

   (b) $e^{xy} = e^{3x} - e^{4y}$

It is mentioned in §3.5 #42 that the graph of the equation

$$2y^3 + y^2 - y^5 = x^4 - 2x^3 + x^2,$$

as seen to the right, without axes, looks like a bouncing wagon. Find $\frac{dy}{dx}$.