Lesson #29

Implicit Differentiation

➢ Method for finding derivatives when functions are defined implicitly

Rewrite the function below explicitly.

$$\frac{1}{x} + \frac{1}{3} = \frac{1}{y}$$

Example #1:

Given $xy = 1$.

Find the derivative explicitly: | Find the derivative implicitly:

Example #2:

$$x^3 - y^3 = 6xy$$

Example #3:

$$\cos(xy) = y$$

Lesson #29
Example #4:

a) Given $x^3 + y^3 = 1$. Find $\frac{dy}{dx}$

b) Write the equation of the tangent line to the curve at x=0.

c) Find $\frac{d^2y}{dx^2}$