

Suggested Problems for Monday, September 10

Use implicit differentiation to find the derivatives of the following functions:

1. If $y^3 + x^3 = 3xy$, find $\frac{dy}{dx}$.
2. If $x \cdot e^y - y \cdot e^x = 1$, find $\frac{dy}{dx}$.

Use logarithmic differentiation to find the derivatives of the following functions:

1. If $f(x) = \frac{(1+x^3)^{7/2}(1-x^3)^{9/2}}{(1+x^2)^{11/2}}$, find $f'(x)$.
2. If $g(x) = (1+x)^{(1-x)}$, find $g'(x)$.

For additional practice with implicit differentiation and related rates, look at problems 1–32 in Section 2.6.

For additional practice with logarithmic differentiation, look at problems 49–56 in Section 4.3.