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 $xe^y - ye^x = 1$, 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.

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