Name_____

Mathematics 105: Calculus I
Fall Semester 2009
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Quiz #20

The sum of two non-negative numbers is 9. What is the largest value you can get if you multiply one of the numbers by the square of the other?

A. Use implicit differentiation to obtain an expression for the derivative of the objective function, which you will set equal to 0.

B. Use implicit differentiation on the constraint equation to obtain an expression for y'.

C. Use the results from A and B to compute the maximum value of the objective function, as well as the values of the two numbers at which the objective function achieves its maximum value.