Name_____

Mathematics 105: Calculus I
Fall Semester 2009
David Haines
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Quiz #19

You are to find the maximum value taken on by the objective function xy^3 subject to the constraint equation $x + y = 4$.

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 differential 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 x and y at which the objective function achieves its maximum value.