

M104, Practice Quiz for Quiz 8 April 3, covering section 6.6

This practice quiz does not count for points, but I will use some of these problems as models which I'll follow for the real Quiz 8 on Wednesday, April 3, 2013.

- (1) Use differentials to estimate 9^3 . (I.e., use the line tangent to the function $f(x) = x^3$ at the point $x = 10$.)
- (2) Use differentials to estimate 20.5^2 . (Decide for yourself what function $f(x)$ to find the tangent line for and at what value of x to find the tangent line, but explicitly state what $f(x)$ you're using and at what value of x , and what the value of Δx is.)
- (3) Let q be the quantity of some product that can be sold at a unit price p . When p is \$5, assume that $q = 100,000$ and that $\frac{dq}{dp} = 500$.
 - (a) Find the revenue when $p = 5$.
 - (b) Use differentials to estimate how much the revenue increases if p is increased by 10 cents.