12pm

Quiz 5

Fall 2012 **Your name:** _____

Math 0220 **Your TA's name:** _____

No calculators, no notes, no books. Show all your work (no work = no credit). Write neatly. Simplify your answers.

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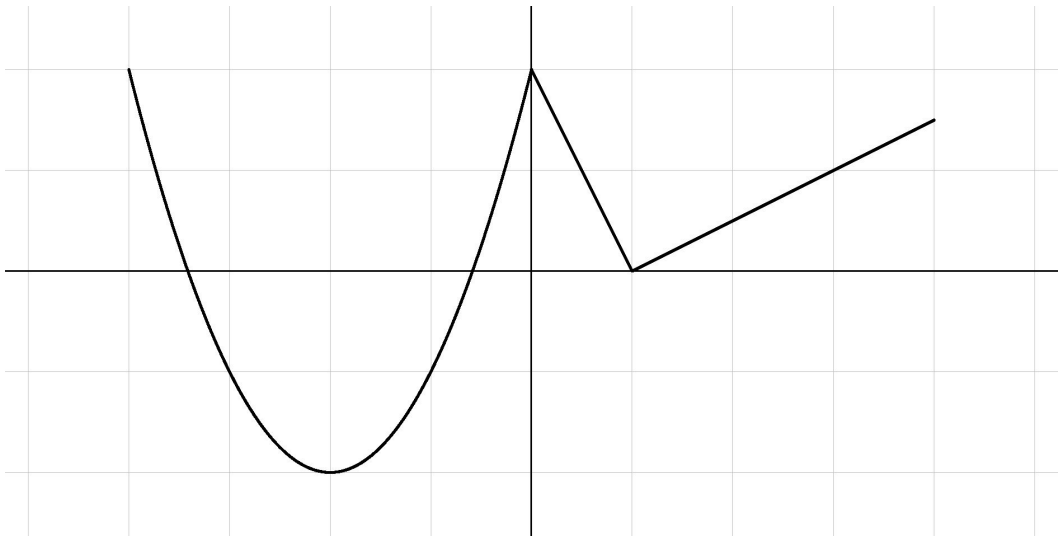
1. Differentiate

(a) [1 point] $V(r) = \frac{4}{3}\pi r^3$

(b) [1 point] $y = 5\pi^2$

(c) [3 points] $f(t) = \dfrac{1 - \sin t}{\cos t}$

2. [5 points] The graph of the function $f(x)$ is given. Sketch the graph of its derivative $f'(x)$ below the graph of $f(x)$.



bonus problem [5 points extra] Find an equation of the tangent line to the curve $y = (1 + x)\cos x$ when $x = \dfrac{\pi}{4}$. Simplify your answer. Write the equation in the slope-intercept form.