Math 220 (section AD?) **Quiz 4** **Fall 2016**

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (2 points) What is the slope of the curve $y = 10 - 2e^x$ at its x-intercept? Simplify your answer.

2. (2 points) Determine the equation of the line which is tangent to the curve $f(x) = x^4 + 6x + 10$ and perpendicular to the line $x + 2y = 16$.

3. (2 points each) Using Leibniz notation (i.e., $\frac{dy}{dx}$, $\frac{dP}{dt}$, etc.), find derivatives for each of the following functions.

(a) $q = \left(\dfrac{-2x^3}{\sqrt[3]{2x}} \right)^3 + \cos\left(2 \arcsin\left(3/5\right)\right)$ (simplify your answer)

(b) $p = v^6 \sec\left(v\right)$

(c) $r = \dfrac{5 + 2\sin t}{t^4}$