NAME: MATH1210-002

Quiz 10: §3.8, 3.9 & 4.1

July 18, 2016

Instructions: Please show all of your work as partial credit will be given where appropriate, *and* there may be no credit given for problems where there is no work shown. All answers should be boxed and completely simplified, unless otherwise stated. No electronics are allowed.

1. **[8 points each]** Evaluate these indefinite integrals.

   (a) $\int 2\cos x - x + \frac{3}{\sqrt[3]{x^4}}\,dx$

   (b) $\int 2x^2(2x^3+1)^{-2}\,dx$

2. **[5 points]** Find a solution to the differential equation $y' = y\tan x$ by guessing.

3. **[8 points]** Evaluate $\sum_{i=1}^{50}(2i^2+4i-5)$

Answer: _____

4. **[5 points]** Write the following sum in "sigma notation." Start your counter at 1 and use i as your variable

$$\frac{3(1)^3}{3}+\frac{3(2)^3}{4}+\frac{3(3)^3}{5}+\frac{3(4)^3}{6}+\frac{3(5)^3}{7}+\ldots$$

Answer: _____

5. **[6 points]** Evaluate $\int 3\sec^2 x\,dx$

Answer: _____