**232 Quiz 8**

April 6, 2012

**Section:** _____ **Name:** * key * V2

*Work individually. You may use your Notebooks but no other materials and no technology.*

1. For each integral below, describe a method that will work but DO NOT SOLVE THE INTEGRAL HERE. Here are just a few examples of proper descriptions:

   substitution with $u =$ ____ and $du =$ ____

   rewrite the integral as ____, then substitution with $u =$ ____ and $du =$ ____

   parts with $u =$ ____, $du =$ ____, $v =$ ____, and $dv =$ ____

   partial fractions decomposition of the form _____ (do not solve for coefficients)

   trig substitution with $x =$ _____ and $dx =$ _____

   algebra/identity to rewrite as _____ and then ⟨describe method⟩

   a) $\int \sec^4 x \tan^4 x \, dx$ read the instructions carefully before starting

   rewrite as $\int (\tan^2 x + 1) \tan^4 x \, (\sec^2 x) \, dx$

   then subst'n with $u = \tan x$, $du = \sec^2 x \, dx$

   (to get $\int (u^2+1) u^4 \, du$; mult. out & anti-diff.)

   b) ~~$\int (9 + 25x^2)^{-\frac{3}{2}} \, dx$~~ $\int \frac{x^4+1}{(x-1)^3(x^2+2)} \, dx$

   PF decomp of the form $\frac{A}{x-1} + \frac{B}{(x-1)^2} + \frac{C}{(x-1)^3} + \frac{Dx+E}{x^2+2}$