

232 Quiz 8

April 6, 2012.

Section: _____

Name: * key * v l

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 $u = \underline{\hspace{2cm}}$ and $du = \underline{\hspace{2cm}}$

rewrite the integral as $\underline{\hspace{2cm}}$, then substitution with $u = \underline{\hspace{2cm}}$ and $du = \underline{\hspace{2cm}}$

parts with $u = \underline{\hspace{2cm}}$, $du = \underline{\hspace{2cm}}$, $v = \underline{\hspace{2cm}}$, and $dv = \underline{\hspace{2cm}}$

partial fractions decomposition of the form $\underline{\hspace{2cm}}$ (do not solve for coefficients)

trig substitution with $x = \underline{\hspace{2cm}}$ and $dx = \underline{\hspace{2cm}}$

algebra/identity to rewrite as $\underline{\hspace{2cm}}$ and then (describe method)

a) $\int \sec^3 x \tan^3 x \, dx$

read the instructions carefully before starting

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

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

(to get $\int u^2(u^2 - 1) \, du$; mult. out & antidiff.)

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

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