

232 Quiz 8

November 11, 2011

Section: _____

Name: *key* VI

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) $\int \sec^4 x \tan^4 x \, dx$

read the instructions carefully before starting

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

$$u = \tan x, \quad du = \sec^2 x \, dx$$

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

$$\frac{1}{81} \int \frac{1}{\left(\sqrt{1 + \left(\frac{5}{3}x\right)^2}\right)^3} \, dx$$

$$\frac{5}{3}x = \tan u, \quad \frac{5}{3}dx = \sec^2 u \, du$$

$$x = \frac{3}{5} \tan u, \quad dx = \frac{3}{5} \sec^2 u \, du$$