

232 Quiz 8

November 11, 2011.

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

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

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

b) $\int (16 - 9x^2)^{-\frac{3}{2}} \, dx$

$$\frac{1}{16^2} \int \frac{1}{\left(\sqrt{1 - \left(\frac{3}{4}x\right)^2}\right)^3} \, dx$$

$$\frac{3}{4}x = \sin u, \quad \frac{3}{4}dx = \cos u \, du$$

$$x = \frac{4}{3} \sin u, \quad dx = \frac{4}{3} \cos u \, du$$