

# MATH141(0332/0342) Calculus II Fall 2009

Worksheet 6, Section 8.1-8.3

Name: \_\_\_\_\_

1. (6 points) Find the following integrals.

$$(1) \int (\ln x)^2 dx$$

$$(2) \int \tan^{-1} x dx$$

$$(3) \int e^x \sin(x) dx$$

2. (6 points) Find the following trigonometric integrals.

$$(1) \int \sin^5 x \cos^3 x dx$$

$$(2) \int \tan^7 x \sec^4 x dx$$

$$(3) \int \sin^5 x \cot^3 x dx$$

3. (8 points) Evaluate the following integrals.

$$(1) \int \frac{x^2}{(x^2 - 2)^{5/2}} dx$$

$$(2) \int \frac{1}{\sqrt{4x^2 + 4x + 2}} dx$$

$$(3) \int \frac{2x - 3}{\sqrt{4x - x^2 - 3}} dx$$

$$(4) \int x \sin^{-1} x dx$$