

SECOND MIDTERM FOR MATH 143

WEDNESDAY, MARCH 25, 2015

- The only calculators permitted are models TI-83 and TI-84.
- In order to get full credit, please justify all steps in your solution.

You have 75 minutes to complete the test.

GOOD LUCK!!!

1. Evaluate the following integrals:

(a) $\int \frac{dx}{2x^2+3x+1}$

(b) $\int \frac{(t+1)dt}{9t^2+6t+5}$

2. Determine whether each integral is convergent or divergent.

(a) $\int_1^\infty \frac{dx}{3x-1}$

(b) $\int_1^\infty \frac{\arctan x}{x^3} dx$

(c) $\int_2^7 \frac{t}{\sqrt{t-2}} dt$

3. Use the Midpoint Rule with $n = 4$ to approximate the integral

$$\int_3^7 \frac{dx}{\ln x}.$$

Round your answer to 4 decimal places.