Test 1

Math 141 Calculus II, UMass Boston, Fall 2014
Instructor: Todor Milev
Time for work: 55 minutes.

Name:

The exam is closed books/notes, no calculators allowed. You are allowed a single one-sided formula sheet, handwritten by you. The formula sheet will be collected together with the test.

Problem 1. *Express as a rational function of t.*

$$\cot(2\arctan t)$$

Problem 2. *Evaluate the indefinite integral. Illustrate the steps of our solution.*

$$\int xe^{-2x}\mathrm{d}x$$

Problem	1	2	3	4	5	6	$\sum$
Points	16	16	16	16	16	25	105
Score							

Problem 3. *Integrate*

$$\int \frac{x}{3x^2 + x - 2} \mathrm{d}x$$

Problem 4. *Integrate*

$$\int \frac{x}{3x^2 + x + 2} \mathrm{d}x$$

Problem 5. *Integrate*

$$\int \frac{1}{4+\cos x}\mathrm{d}x$$

Problem 6. *Integrate*

$$\int \sqrt{3x^2 + x + 1}\mathrm{d}x$$