MAT 1332, Fall 2015, Assignment 2
Due Friday October 23 at 2:00 pm.
Late assignments will not be accepted.

Instructor: Aziz Khanchi

Drop it in the box of 1332, found in Math dept (585 King Edward ave, Ottawa, ON): first floor, on the left wall.

Student Name _____ Student Number _____

QUESTION 1. Evaluate the improper integral

$$\int_{-1}^{1} \frac{e^x}{e^x - 1} dx.$$

QUESTION 2. Evaluate the integral

$$\int \frac{dx}{x^2 + x + 1}.$$

QUESTION 3. Find the volume of the solid obtained by rotating the region bounded by $y^2 = x$ and $x = 2y$ about the y-axis.

QUESTION 4. Solve the differential equation

$$\frac{dy}{dx} = \frac{6x^2}{2y + \cos y}$$

and provide its general solution.

QUESTION 5. Find all equilibrium points of the following differential equation and determine their stability.

$$\frac{dy}{dx} = (\ln y - 1)(5 - y).$$