MAT 1332, Spring/Summer 2012 Assignment 2

Due May 29, 2012 at the beginning of class.

Late assignments will **not** be accepted; **nor** will unstapled assignments.

Instructor: Olga Vasilyeva

Student Name _____ Student Number _____

QUESTION 1. Find the area of the region bounded by the curve $y = x^2 - 3x$ and the x-axis, and determine the average value of the function $f(x) = x^2 - 3x$ on the corresponding interval. Include the sketch of the region. Leave your answers in exact form (not a decimal approximation).

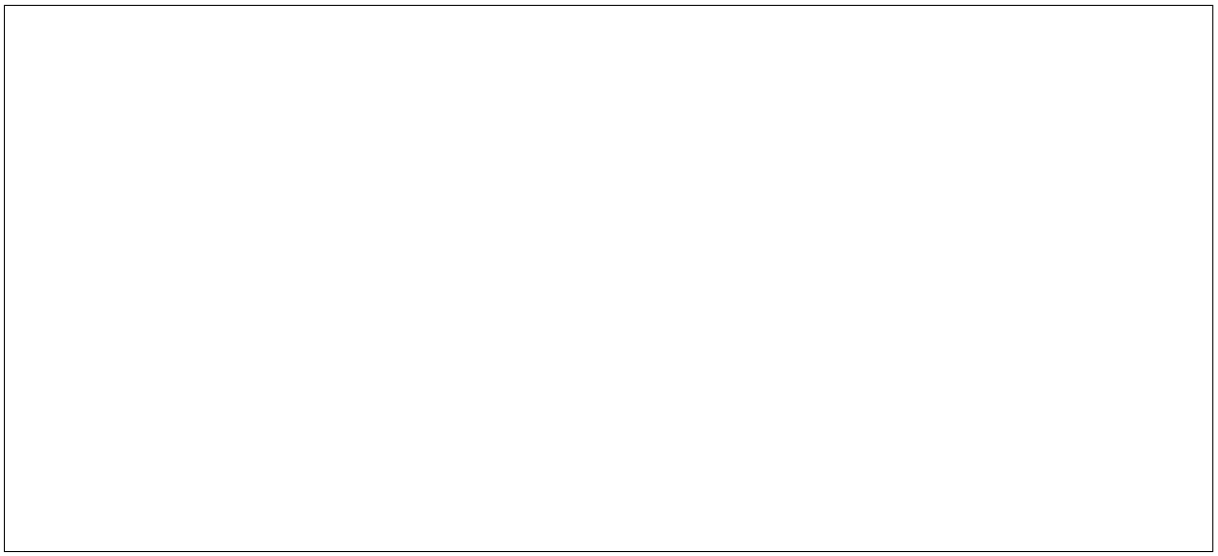
QUESTION 2. Evaluate the integral $\int \frac{7x+5}{x^2-6x+9} dx$.

QUESTION 3. Evaluate the integral $\int \frac{x^3 + 2x^2 - 18x + 2}{x^2 + x - 12} dx$.

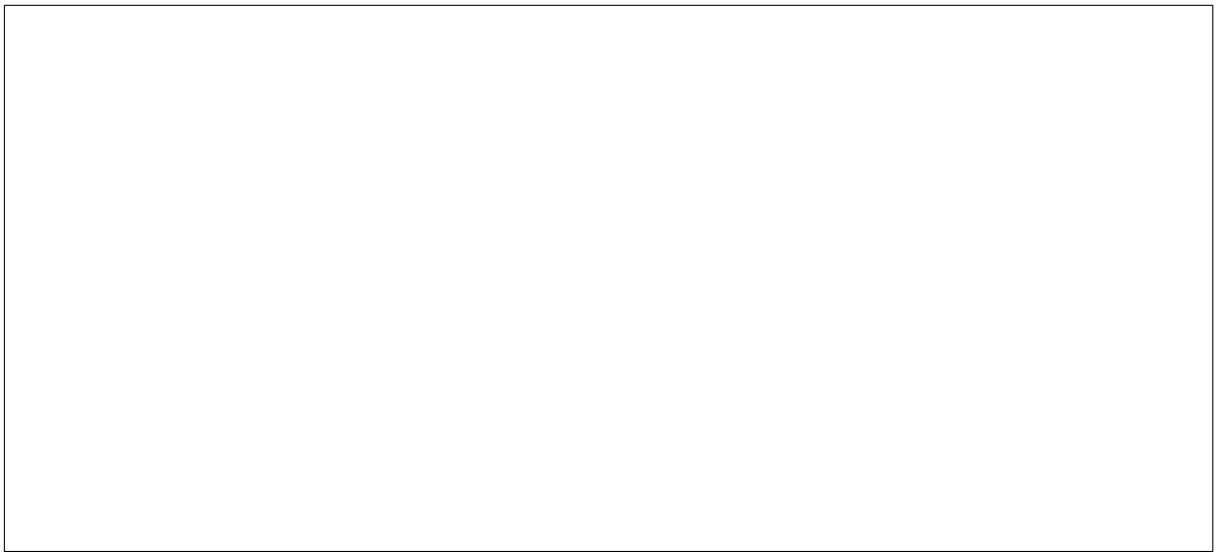
QUESTION 4. Evaluate the following integrals:

(a) $\int \frac{dx}{x^2 + 14x + 55}$.

(b) $\int \frac{(x+7)dx}{x^2+14x+55}$.



QUESTION 5. Calculate $\int_0^{\frac{\pi}{2}} \frac{\cos x \ dx}{\sqrt{\sin x}}$.



QUESTION 6. Calculate $\int_0^{\infty} \frac{dx}{(x+2)^{\frac{1}{3}}}$.

QUESTION 7. Calculate $\displaystyle\int_{-2}^{2} \frac{dx}{\sqrt{2-x}}$.

QUESTION 8. Evaluate $\displaystyle\int_{a}^{\infty} e^{-t} \cos t \; dt$.