

Serial No.: _____ Student Name: _____ Student Number: _____
Instructor: M. Z. Abu-Sbeih Math 102- Q4 Date: 1-5-2010

Problem 1: (7 points) Evaluate the integral

$$\int \sqrt{2x - x^2} \, dx$$

Problem 2: (6 points) Write the general form of the partial fraction decomposition of

$$\frac{2x - 1}{(1 - x^2)(x^3 - 1)}. \text{ DO NOT FIND THE CONSTANTS.}$$

Problem 3: (12 points) Determine whether the improper integral converges or diverges.

(a) $\int_0^{\infty} \frac{x \, dx}{e^x}$

(b) $\int_0^2 \frac{dx}{(x-1)^5}$