

Serial No.: \_\_\_\_\_ Student Name: \_\_\_\_\_ Student Number: \_\_\_\_\_  
Instructor: M. Z. Abu-Sbeih Math 102- Q4 Date: 1-8-2011

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**Show all your work. No credits for answers not supported by work.**

**Problem:** Evaluate the integrals  $\int \frac{8 dx}{x^2 - 6x + 8}$

(a) By using the trigonometric substitution

(b) By using partial fractions

**Problem 2:** Determine if the integral converges or diverges.

(a)  $\int_1^{\infty} \frac{x \, dx}{(1+x^2)^2}$

(b)  $\int_0^2 \frac{dx}{\sqrt{4-x^2}}$

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Math 102- Q4B

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**Show all your work. No credits for answers not supported by work.**

**Problem:** Evaluate the integrals  $\int \frac{6 dx}{x^2 - 4x - 5}$

(c) By using the trigonometric substitution

(d) By using partial fractions

**Problem 2:** Determine if the integral converges or diverges.

(c)  $\int_1^{\infty} \frac{x \, dx}{(1+x^2)^3}$

(d)  $\int_0^3 \frac{dx}{\sqrt{9-x^2}}$