Q1. 
$$\int \frac{x^4 + 1}{x(x^2 + 1)^2} dx$$

Q2. A student makes the substitution  $3x = 2\cos\theta$  where  $0 < \theta < \pi$  in an integral. Write the following in terms of x.

i) 
$$\theta =$$

ii) 
$$\csc \theta =$$

iii) 
$$\tan \theta =$$

## King Fahd University for Petroleum and Minerals Department of Mathematics & Statistics

Term 151 Math 102 (8) Quiz #4 (8.3, 8.4, and 8.7)

Family Name: S.r#

Q1. 
$$\int \frac{x^2 + 3x}{x^3 + x^2 + x + 1} dx$$

Q2. 
$$\int \frac{1}{x^2 + 4x + 5} dx$$
 (**Hint**: Complete the square..)