Math 125A Summer 2009   **Name:** _____

Quiz #3

Show your work. Closed Notes. You have 25 minutes.

1. (4 points) Write down the equation that you would use to decompose the following rational function into partial fractions. DO NOT SIMPLIFY OR SOLVE.

$$\frac{1}{x^3(x+5)^2(x^2+1)}$$

2. (4 points) Write $\sin\left(\cos^{-1}\left(\frac{1}{x}\right)\right)$ in a form that does not involve trigonometric functions.

(Continued on back)

3. (7 points) Give the general form of $\displaystyle\int \frac{x^4 + 1}{x^3 - x^2}\, dx$. [Hint: Use polynomial long division and partial fractions]