King Fahd University of Petroleum & Minerals
Faculty of Science
Math P-Y Quiz #11

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Name: **Sect#** ST.ID

1) Divide $2x^4 + 4x^3 - 5x^2 + 3x - 2$ by $x^2 + 2x - 3$

2) If $\frac{1}{2}$ is a zero of $f(x) = 4x^4 - kx^2 + 1$ then find $f(2)$

3) Find the values of k such that $x - 1$ is a factor of $k^2x^3 - 4kx + 3$

4) Find the remainder if $3x^{100} + 5x^{85} - 4x^{38} + 2x^{17} - 6$ divided by $x + 1$

5) Find the inverse of $f(x) = \dfrac{x-1}{x+5}$

6) Determine whether the function is one-to-one if not restrict the domain so that it will be one-to-one and find its inverse, the domain and the range.

$f(x) = x^2 - 4x + 3$

7) Show that the function $f(x) = \dfrac{1}{x}$ is symmetric with respect to the line $y = x$

8) If $f(x) = -x^2 - 3x + k$ and the inverse exists. If $f^{-1}(2) = 3$ then $k =$?