SLU PreCalculus Quiz 3B Fall 2007

Name _____ Score_____/10

Please Print Clearly

1. Consider the polynomial function whose rule is $f(x) = (x - 4)^2(x + 2)^4(x - 1)^6$

a) What are the zeros of f and what are their multiplicities? **Zeros of the function and their multiplicities are numbers.**

b) Present an argument which establishes that the graph of f is never below the x-axis.

_____

_____

_____

_____

_____

2. Suppose g is a polynomial function with odd degree. Explain why the graph of f must cross the x-axis at least once.

_____

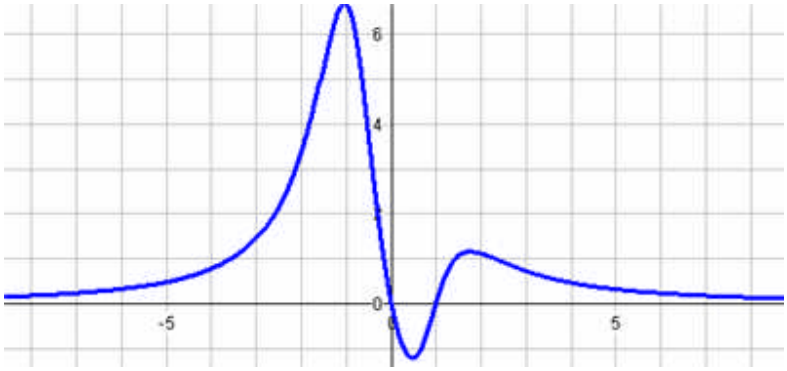
_____

_____

_____

_____

3. Answer the following questions about the **rational** function whose graph is shown at the right.



a) What are the apparent real zeros of the numerator of this rational function? **Zeros of the numerator are numbers.**

b) What are the apparent real zeros of the denominator of this rational function ? **Zeros of the denominator are numbers.**

c) What is the apparent horizontal asymptote of this rational function ? **Give the equation for the line.**

d) Compare the degree of the numerator with the degree of the denominator for this rational function ?

e) What is the degree of the numerator of this rational function ?