College Algebra Quiz 7 Summer 2010

NAME: _____Score_____/10

Please **print** your name

No Decimals No mixed numbers No complex fractions No boxed or circled answers

Do all sketching on the coordinate system provided.

1. Consider the function f whose rule is $f(x) = \dfrac{4x^2 + 5x - 6}{2x^2 - 9x - 5} = \dfrac{(4x - 3)(x + 2)}{(2x + 1)(x - 5)}$

   a. What is the domain of f? _____ sketch it.

   b. What are the zeros of f? _____ sketch it.

   c. What are the vertical asymptotes of f? _____ sketch it.

   d. What is the horizontal asymptote of f? _____ sketch it.

   e. Sketch the graph of f. The following calculations will help. I did some for you.

      i. $f(-3) = \dfrac{(4[-3] - 3)(-3 + 2)}{(2[-3] + 1)(-3 - 5)} = \dfrac{(-15)(-1)}{(-5)(-8)} = \dfrac{15}{40} = \dfrac{3}{8}$. Plot the corresponding point.

      ii. Calculate f(-1). Plot the corresponding point.

      iii. Calculate f(0). Plot the corresponding point.

      iv. $f(1) = -\dfrac{1}{4}$. Plot the corresponding point.

      v. $f(7) = \dfrac{45}{6}$. Plot the corresponding point.

      vi. The graph of f crosses its horizontal asymptote at $\left(-\dfrac{1}{5}, 2\right)$.