Math 99 Fall 2007
Worksheet 3
Due Monday October 15

Name: _____

Section 7.3: Functions

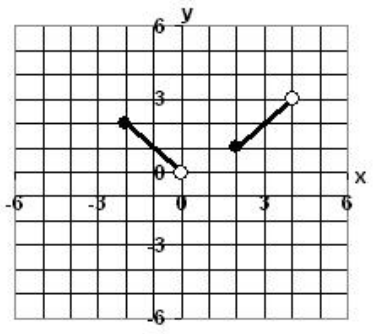
1. Find the domain of the following functions:
   a. $f(x) = 2x + 7$

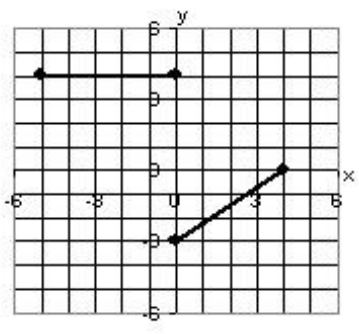
   b. $g(x) = \dfrac{3}{2x+7}$

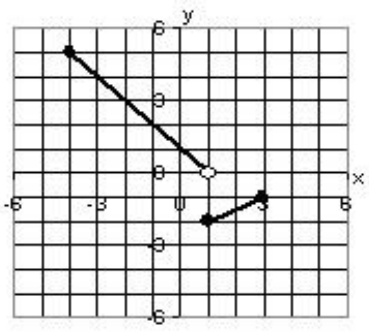
   c. $h(x) = \sqrt{2x+7}$

   d. $j(x) = \dfrac{3}{\sqrt{2x+7}}$

2. In each case, find the domain, the range, and whether it is a function. Also evaluate f(1).







3. In each case, find the domain, the range, and whether it is a function. Also: evaluate $f(3)$, and find value(s) for x such that $f(x) = 3$.

   a.

x	0	2	1	3	4
$f(x)$	3	4	1	3	0

   b.

x	0	3	1	3	4
$f(x)$	3	4	1	2	0

4. Given equations, you should also be able to find domains and evaluate functions. Do so for the following:

   a. Given $f(x) = \dfrac{4}{\sqrt{x+1}}$, simplify $f(3)$, $f(-1)$, $f(x-1)$, and find an x-value such that $f(x) = 1$.

   b. Given $g(x) = \dfrac{3}{x^2-4}$, simplify $g(0)$, $g(2)$, $g(x+2)$, and find an x-value such that $g(x) = -1$.

Sections 8.1-8.3:
Solving Systems of Linear Equations by Graphing, Substitution, and Elimination
Practice solving these with different techniques. (You must know all of these techniques.)

1. $2x + y = 6$
   $x - 3y = -4$

2. $2x - 5 = -y$
   $x + 3y = 0$

3. $2x + 10y = 3$
   $x = 1 - 5y$

4. $\dfrac{x}{2} + \dfrac{y}{3} = \dfrac{7}{6}$
   $\dfrac{x}{4} - \dfrac{3y}{2} = \dfrac{9}{4}$

5. $\dfrac{x}{2} - \dfrac{y}{8} = -\dfrac{1}{4}$
   $-4x + y = 2$

6. $y = 4x - 4$
   $y = -3x - 11$

7. In the bookstore, 1 plate and 2 mugs cost \$11. Also, 3 plates and 5 mugs cost \$29. What is the cost of one plate and one mug?