Name: _____

Define and Represent a Function

1) Express each of the following rules in function notation. (For example, "Subtract 3, then square" would be written as $f(x) = (x-3)^2$.)

   1. (a)Divide by 7, then add 4
      (b)Add 4, then divide by 7

   2. (a)Multiply by 2, then square
      (b)Square, then multiply by 2

   3. (a)Take the square root, then subtract 6 squared
      (b)Take the square root, subtract 6, then square

   4. (a)Add 4, square, then subtract 2
      (b)Subtract 2, square, then add 4

2) If $f(x) = \frac{2+x}{x-3}$,

   1) Find $f(-7)$
   2) Find $f(0)$
   3) Find $f(5)$
   4) Find $f(3)$
   5) Find $f(-2)$

3) If $g(x) = \frac{5-2x}{x+4}$,

   1) Find $g(2)$
   2) Find $g(-4)$
   3) Find $g\left(\frac{5}{2}\right)$
   4) Find $g(-3)$
   5) Find $g(0)$

4) Determine whether or not the set of points represents a function. Justify your answer.

   1) $\{(1,5),\ (2,4),\ (-3,4),\ (2,-1),\ (3,6)\}$

   2) $\{(-3,2),\ (1,2),\ (0,-3),\ (2,1),\ (-2,1)\}$

   3) $\{(2,0),\ (4,-1),\ (6,0),\ (3,-1),\ (5,2)\}$

   4) $\{(-1,-4),\ (-2,3),\ (4,1),\ (4,2),\ (-2,-3)\}$

   5) $\{(-7,3),\ (3,-7),\ (1,5),\ (5,1),\ (-2,1)\}$