

## Inverse Functions 8-8

### Definition of Inverse Functions

1. Determine if  $f(x) = 6 - 2x$  and  $g(x) = \frac{6-x}{2}$  are inverse functions.

2. Determine if  $f(x) = 4 - x$  and  $g(x) = x + 4$  are inverse functions.

### Property of Inverse Functions

How do you tell an equation is NOT a function?

Find the inverse of each function and determine whether or not the inverse is a function.

3.  $f(x) = x + 3$

*To find the inverse function*

STEP 1: Rewrite the function with  $y =$   
(if necessary)

STEP 2: Switch  $x$  and  $y$  in the equation

STEP 3: Solve for  $y$

STEP 4: Replace  $y$  with the notation for an  
inverse function (if necessary)

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

5.  $g(x) = \frac{2}{3}x - \frac{1}{4}$

## Inverse Functions 8-8

6.  $y = (x + 10)^2$

7.  $h(x) = \frac{x-7}{2}$

8.  $q(x) = \frac{2}{3}x + 5$

9.  $y = 7$

### Definition of Inverse Relations

Find the inverse of each function and determine whether or not the inverse is a function.

10.  $\{(5, 1), (1, 8), (-1, 4)\}$

STEP 1: Switch x and y values

STEP 2: Look at new domain values to determine if it is a function

11.  $\{(-5, 1), (2, -8), (-3, 5), (0, 1)\}$

12.  $\{(6, 1), (3, -7), (3, -4), (-8, 2)\}$