

$$f(x) = y$$

10/8/2012

## 4.7 Graph Linear Functions

Plug in values for  $g(x)$  &

$n(x)$  to solve for  $x$ !

### II. Finding $x$ -values

Find the value of  $x$  so that the function has the given value

$$3) g(x) = -x + 5$$

$$\begin{array}{r} 2 = -x + 5 \\ -5 = -5 \\ -3 = -x \\ 3 = x \end{array}$$

$$\begin{array}{r} 4) n(x) = -2x - 21 \\ -6 = -2x - 21 \\ +21 = +21 \\ \hline 15 = -2x \\ -2 = -2 \\ 7.5 = x \end{array}$$

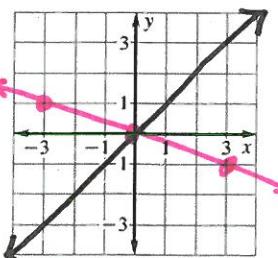
## "Vertical Translations"

### III. Graph

Graph the function. Compare with the parent function  $f(x) = x$ .

$$6) p(x) = -\frac{1}{3}x + 0$$

$$\begin{array}{l} \text{slope} = -\frac{1}{3} \\ y\text{-int} = 0 \end{array}$$



- intersects parent function at origin
- has a negative slope

### I. Evaluate

Evaluate the function when  $x = -2, 0$ , and  $3$

$$1) f(x) = 12x + 1$$

$$\begin{array}{r} f(x) = 12(-2) + 1 \\ f(x) = -23 \end{array}$$

$$\begin{array}{r} f(x) = 12(0) + 1 \\ f(x) = 1 \end{array}$$

$$\begin{array}{r} f(x) = 12(3) + 1 \\ f(x) = 37 \end{array}$$

$$2) h(x) = \frac{1}{2}x - 6$$

$$\begin{array}{r} h(x) = \frac{1}{2}(-2) - 6 \\ = -1 - 6 \\ = -7 \end{array}$$

$$\begin{array}{r} h(x) = \frac{1}{2}(0) - 6 \\ h(x) = -6 \end{array}$$

$$\begin{array}{r} h(x) = \frac{1}{2}(3) - 6 \\ = 1.5 - 6 \\ h(x) = -4.5 \end{array}$$

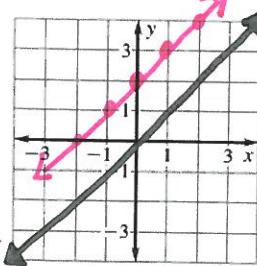
### III. Graph

$$[-7, -6, -4.5]$$

Graph the function. Compare with the parent function  $f(x) = x$ .

$$5) g(x) = x + 2$$

$$\begin{array}{l} \text{1x so} \\ \text{slope} = 1 \\ \uparrow 1, \rightarrow 1 \\ y\text{-int} = 2 \end{array}$$



Parent function (thick) is always  $(1,1), (2,2), (3,3)$  etc because  $f(x) = x$

## Homework

Pages 265-268

#'s 4-22 even, 24, 28, 30,  
40, 52, 54, 58

- parallel to Parent function (same slope)
- 2 units above Parent function