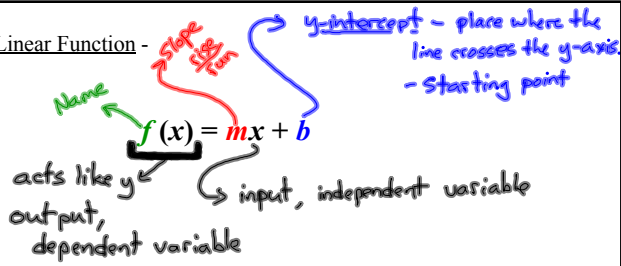


# Algebra II

3-4

## Linear Functions

Linear Function -



Are all linear graphs functions? No

vertical is not a function  
Just x =

Find an equation of the linear function/ using the given information.

1)  $m = 2; b = 3$

$F(x) = mx + b$   
 $F(x) = 2x + 3$

13)  $f(0) = 1; f(3) = 7$

$F(x) = mx + b$   
 $(0, 1) (3, 7)$

$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{7 - 1}{3 - 0} = \frac{6}{3} = 2$

$F(x) = 2x + b$   
 $1 = 2(0) + b$   
 $1 = b$   
 $F(x) = 2x + 1$

11)  $m = -\frac{3}{2}; f(4) = -1$  <sup>input</sup>  $(4, -1)$  <sup>output</sup>

$F(x) = mx + b$   
 $F(x) = -\frac{3}{2}x + b$

$-1 = -\frac{3}{2}(4) + b$   
 $-1 = -6 + b$   
 $5 = b$

$F(x) = -\frac{3}{2}x + 5$

Complete the table, given that is a linear function.

input x	output g(x)
3	4
1	-2
0	-5
-1	-8

$g(x) = mx + b$   
 $m = \frac{4 - (-2)}{3 - 1} = \frac{6}{2} = 3$

$g(x) = 3x + b$   
 $4 = 3(3) + b$   
 $-5 = b$

$g(x) = 3x - 5$

$g(0) = 3(0) - 5 = -5$

$-8 = 3x - 5$   
 $-3 = 3x$   
 $-1 = x$

27)  $f(6) = 7; f(3) = 2$

$f(-3) = \underline{-8}$

$f(10) = \underline{\frac{41}{3}}$

$F(x) = mx + b$   
 $m = \frac{7 - 2}{6 - 3} = \frac{5}{3}$

$F(x) = \frac{5}{3}x + b$   
 $2 = \frac{5}{3}(3) + b$   
 $2 = 5 + b$   
 $-3 = b$

$F(-3) = \frac{5}{3}(-3) - 3$   
 $= -5 - 3 = -8$   
 $F(x) = \frac{5}{3}x - 3$

$F(10) = \frac{5}{3}(10) - 3 = \frac{50}{3} - \frac{9}{3}$

x	F(x)
6	7
3	2
-3	-8
10	$\frac{41}{3}$

Assignment:

Pg. 149  
1-30 all