Algebra 3 Name

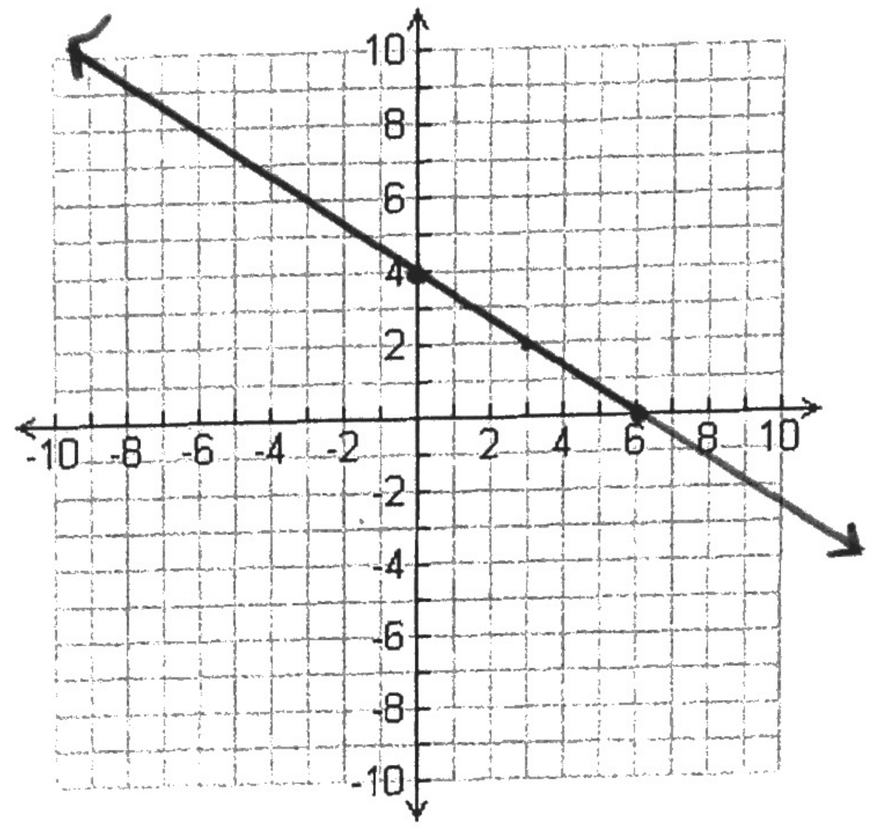
3.1 & 3.3 Linear and Quadratic Functions

1. $f(x) = -\frac{2}{3}x + 4$ Give the following information about the function f.

a. Slope = $-2/3$ b. y-intercept= 4

c. Domain: $\mathbb{R}$ Range: $\mathbb{R}$ d. Average Rate of Change = $-2/3$

e. Graph the function.



2. Determine if the function is linear or not. If it is linear, determine the equation of the line.

a. Linear

x	y
-10	6
-5	6
0	6
5	6
10	6

$y = 6$

b. Not Linear

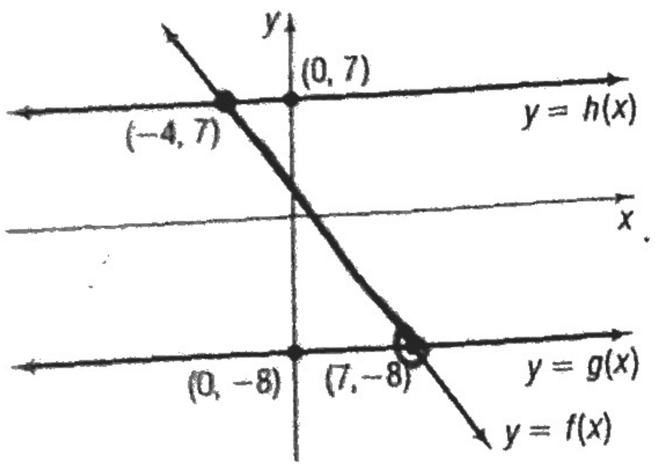
x	y	
-20	1	$\frac{1}{10}$
-10	2	$\frac{2}{10}$
0	4	$\frac{4}{10}$
10	8	$\frac{8}{10}$
20	16	

c. Linear

x	y	
-10	6	$-\frac{4}{5}$
-5	2	$-4/5$
0	-2	$-4/5$
5	-6	$-4/5$
10	-10	

$y = -\frac{4}{5}x - 2$

3. In parts *a* and *b*, use the following figure.



a. Solve the equation $f(x) = g(x)$.

$(7, -8)$

b. Solve the inequality: $g(x) < f(x) \leq h(x)$

$-4 \leq x < 7$