

NAME \_\_\_\_\_

Date \_\_\_\_\_ Period \_\_\_\_\_

# Sections 4. All

## ALGEBRA

### Analyzing Equations Through Slope & Y-int Mixed Review:

1. Which equation would best represent the relationship *y varies directly with x*?

a.  $x^y = 78$

b.  $y = 78x$

c.  $y^x = 78$

d.  $y = 7x + 8$

2. Look at the tables below. Write the equation for the line represented in each table.

$x$	3	5	7	9
$y$	-6	-14	-22	-30

$x$	2	4	6	8
$y$	0	1	2	3

$x$	1	5	9	13
$y$	4	4	4	4

3. Y varies directly with X. When  $x = 6$ ,  $y = 90$ . Find  $y$  when  $x = 10$

4. Find the slope of a line passing through the points (2, -1) and (4, -9)

5. A line with slope of 2 passes through the point (5, 8) and (11,  $r$ ). To which is  $r$  equal?

8. Andrew was keeping track of his pay check. He receives \$ 10 an hour and had a \$70 signing bonus. Write a linear equation to represent his income.

9. In Monopoly, you earn \$ 200 every time you pass "Go." However, you land on Boardwalk once and have to pay \$ 500. Write a linear equation to represent your money.



10. Nick is raising money for the basketball team. He is selling candy. Each box of Snickers brings in \$10 for the school. Each box of M & Ms brings in 8\$ for the school. Nick wants to raise at least \$400. Write an inequality to represent the amount of money Nick needs to raise.

11. Andrew is shopping for things for a party. Cups are \$3 a package and plates are \$5 a package. Write a linear inequality if Andrew wants to spend less than \$15

12. Solve for "y" in each inequality.

a.  $16x - 4y > 8$

b.  $15x - 5y \leq 15$

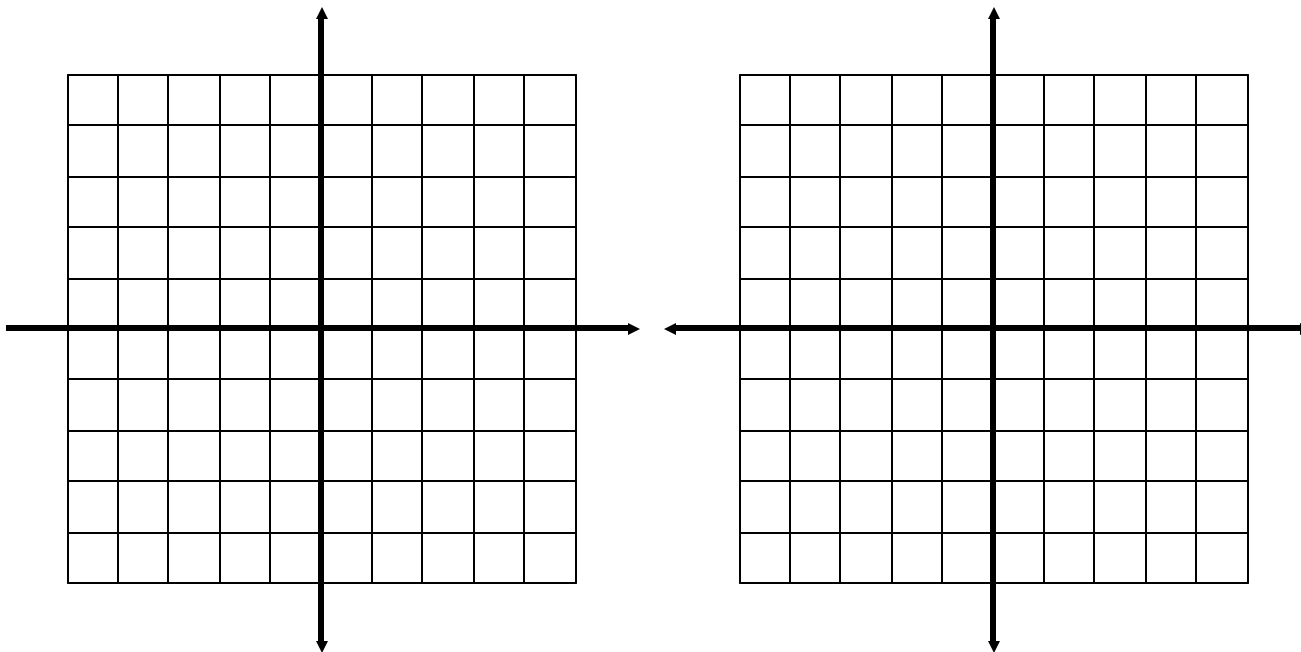
c.  $4x + 2y > 2$

d.  $3x + 3y < 6$

14. Graph the following Inequalities

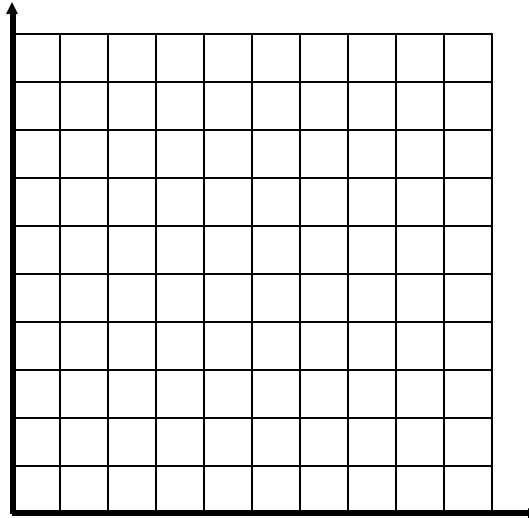
$$y > 3x - 1$$

$$y \leq -\frac{1}{2}x + 1$$



BCR. Every year since 1990, the cost of gas has changed.

Year	Year since 1990	Gasoline (\$)
1995		0.97
1996		1.12
1997		1.16
1998		1.20
1999		1.30
2000		1.35
2001		1.40



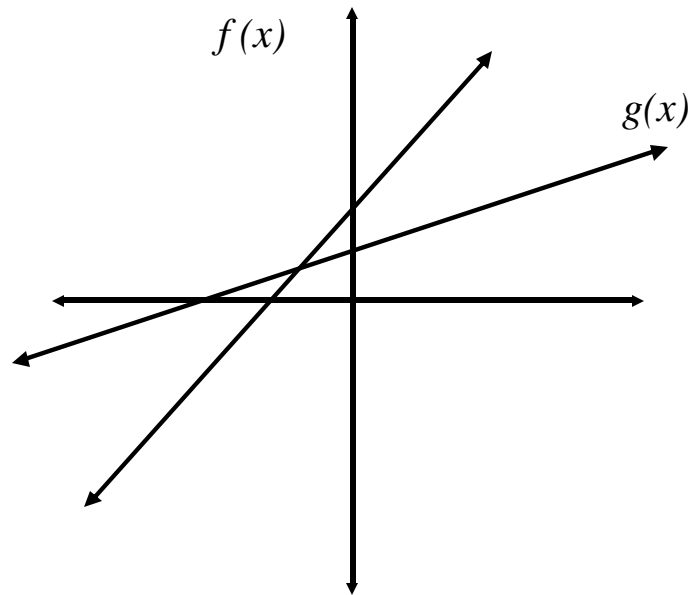
- Write an equation for the Line of Best Fit.
  - Let  $x$  represent the years since 1990
  - Let  $y$  represent the cost of a gallon of gasoline
- If this trend had continued, how much **should** gasoline cost in 2006? Use Mathematics to justify your answer.

**ECR:** Anthony just got a job at Best Buy. Below is a chart of his income over the past few weeks.

<b>Weeks, <math>x</math></b>	3	6	9	12	15
<b>Income in Dollars, <math>y</math></b>	600	1100	1600	2100	2600

- Write an equation representing the relationship between the weeks worked and total income.
- What does the slope of the equation represent?
- After how many weeks will Anthony have \$ 4600? Use mathematics to justify your answer Use words symbols or both in your explanation.

15. Look at the graphs  $f(x)$  and  $g(x)$  of below.



If  $f(x) = 10x + 8$  which of the following could be a possible equation for  $g(x)$ ?

- a.  $g(x) = -\frac{1}{2}x + 2$
- b.  $g(x) = 2x + 10$
- c.  $g(x) = -\frac{1}{2}x - 10$
- d.  $g(x) = 2x - 2$

16. A line passes through the points  $(-4, -4)$  and  $(2, -1)$ . Find the equation of the line.

$$y = \underline{\hspace{10em}}$$

17. A line passes through the points  $(-4, -14)$  and  $(2, 16)$ . Find the equation of the line.

$$y = \underline{\hspace{10em}}$$