

## Cumulative Review Chapters 1-3

Name \_\_\_\_\_

### Ch 1: Solve Equations and Inequalities

Solve and graph the solution on a number line:

1.  $-2 \leq -3x + 5 < 14$

2.  $3(x + 7) + 12 = -15 + x$

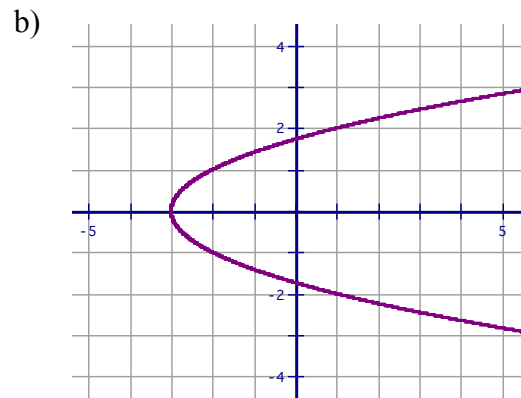
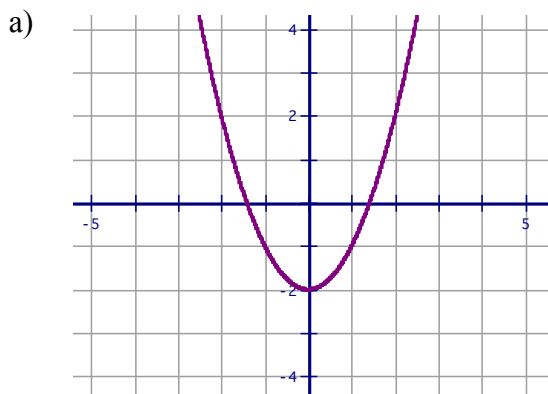
3.  $4|x - 9| + 2 > 18$

### Ch 1: Applications of Expressions, Equations, and Inequalities

4. To rent a car it costs \$19.95 per day plus \$.20 per mile. How many miles did you drive if the total cost for renting the car for one day is \$56.25?
5. The length of a rectangular yard is 50 feet and its perimeter is less than 170 feet. Describe the width of the yard.
6. To start your own perfume business, you pay \$500 in materials. It costs your business \$4 to produce your each perfume bottle, and you sell your each bottle for \$10 a piece. How many bottles must you sell to have a profit of at least \$1000?

## Ch 2: Functions

7. Is it a function? Explain.



c)

$x$	$y$
2	5
3	6
4	6

d)

$x$	$y$
7	4
7	2
9	-3

8. If  $f(x) = 2x - 5$  and  $g(x) = -3x + 4$ , find the following:

a)  $f(3)$

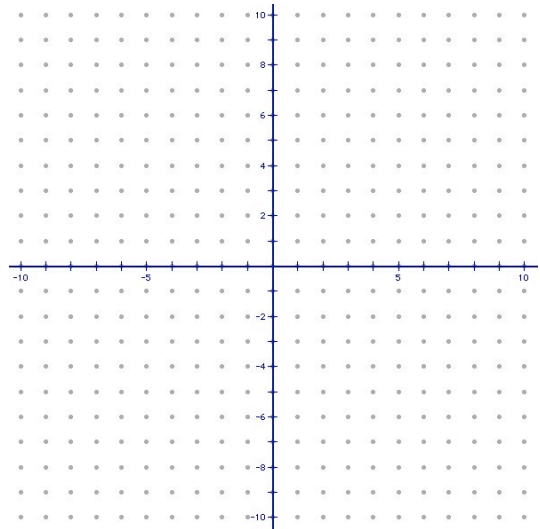
b)  $g(-2)$

c)  $f(-1) + g(3)$

## Ch 2: Linear Functions, Graphs, and their Applications

9. Explain how to determine if 2 lines are parallel or perpendicular by looking only at the equations.

10. Graph  $3x - 4y = -12$ . Find the slope, x-intercept, and y-intercept.



11. There were 174 words typed in 3 minutes. There were 348 words typed in 6 minutes.

a) Write the equation of the line (in all three forms) to represent the words typed in x minutes.

Point-Slope Form \_\_\_\_\_

Slope-Intercept Form \_\_\_\_\_

Standard Form \_\_\_\_\_

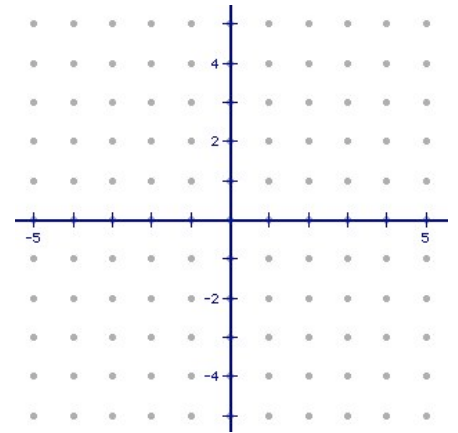
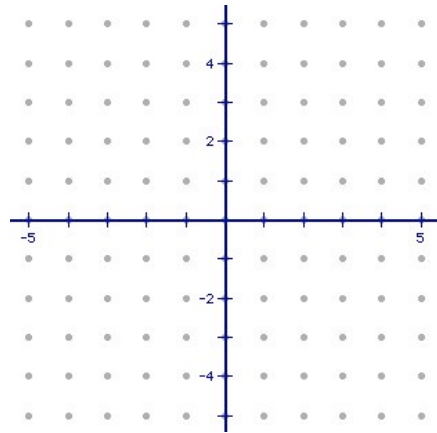
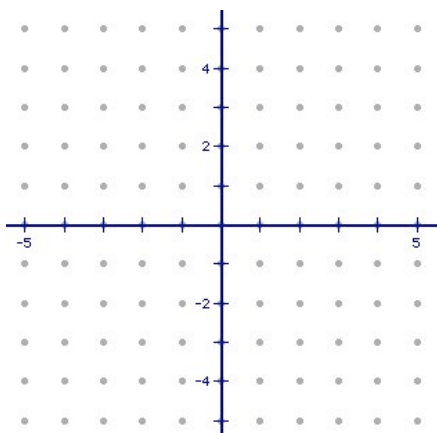
b) How many words will be typed in 15 minutes?

**Ch 2: Graph Equations and Inequalities.**

12.  $y = -3|x + 2| + 1$

2.  $y > -2$

3.  $y < -|x - 1| + 2$

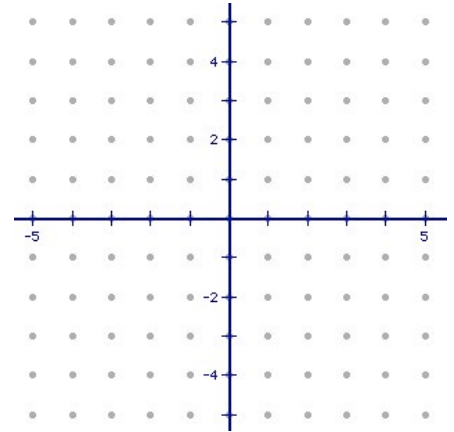


### Ch 3: Solve systems of equations and inequalities

13. 
$$\begin{cases} x + 2y = 10 \\ 3x - y = 9 \end{cases}$$

2. 
$$\begin{cases} y = 3x - 4 \\ 2y - 6x = -8 \end{cases}$$

3. 
$$\begin{cases} y < x - 3 \\ y \geq |x - 3| \end{cases}$$



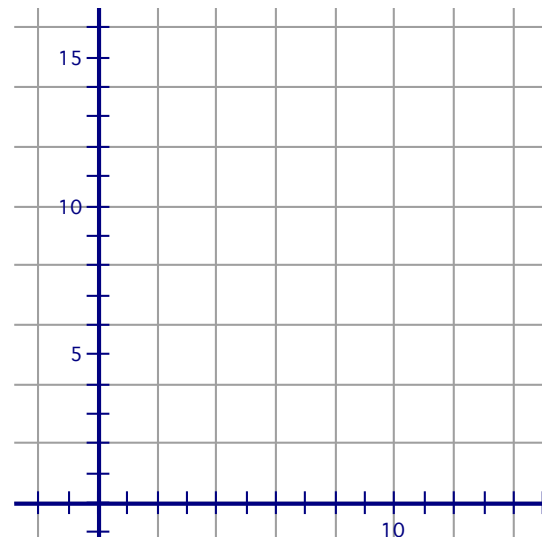
### Ch 3: Applications of systems of Equations and Inequalities

14. Suppose you bought eight oranges and one grapefruit for a total of \$4.60. Later that day, you bought six oranges and three grapefruits for a total of \$4.80. Now you want to find the price of each orange and of each grapefruit. Write an equation for each purchase. Solve the system of equations.

15. Melissa babysits a maximum of 10 hours per week for her neighbor and her brother. She spends at least 3 hours babysitting for her neighbor and at most 5 hours babysitting for her brother.

a) Write a system of inequalities to model the situation.

b) Graph and solve the system.



## Chapter 2: Writing equations of lines

16. Write the equation of the line in point-slope form and slope-intercept form given the following information.

**Perpendicular** to  $y = \frac{1}{3}x - 56$  through point (12, -4)

Point-Slope: \_\_\_\_\_

Slope-Intercept: \_\_\_\_\_

Standard: \_\_\_\_\_

17. Write the equation of the line in point-slope form and slope-intercept form given the following information.

**Parallel** to  $y = -\frac{1}{4}x + 5$  through point (12, -7)

Point-Slope: \_\_\_\_\_

Slope-Intercept: \_\_\_\_\_

Standard: \_\_\_\_\_

18. Write an equivalent equation in standard form for  $y = \frac{2}{3}x - 5$ .