

**Solve Equations**

1.  $3(x-4) - 2(3x+4) = x+4$

$x = -6$

2.  $-\frac{3}{4}x - 2 = 25$

$x = -36$

3.  $3(2x-1) + 5 - 2x = 5 - (6x-17)$

$x = 2$

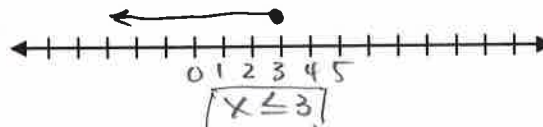
4.  $.05x + .25(2x-3) = 6.40$

$x = 13$

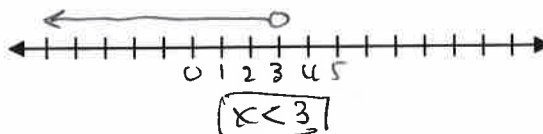
**Solve and Graph Inequalities on a Number Line.**

Solve the following inequalities and graph the solution set on a number line. Test one possible solution.

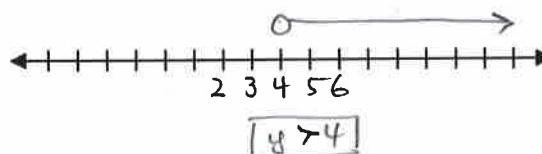
5.  $3(2x-5) + 8 \leq 12 - (x-2)$



6.  $-3(5x-6) + 12 > -4 - (2x+5)$



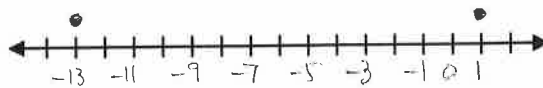
7.  $8y - (3y+3) < 11 + 4(3y-9) - 6$



### Solve Absolute Value Equations

Solve the following absolute value equations. Then graph the solution set on a number line.

8.  $|z + 6| - 3 = 4$

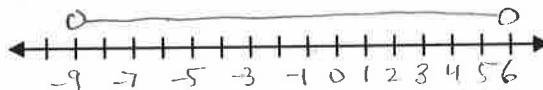


$$x = -13 \text{ or } x = 1$$

### Solve Absolute Value Inequalities

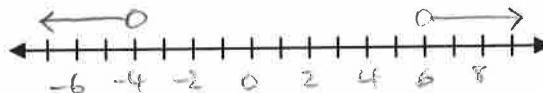
Solve the following absolute value inequality. Then graph the solution set on a number line.

9.  $|2x + 3| < 15$



$$-9 < x < 6$$

10.  $|-2x + 2| > 10$



$$x < -4 \text{ or } x > 2$$

### Proportional Reasoning

11.  $\frac{3}{5x-2} = \frac{4}{8x+7}$

$$x = -\frac{29}{4} \text{ (or } -7.25)$$

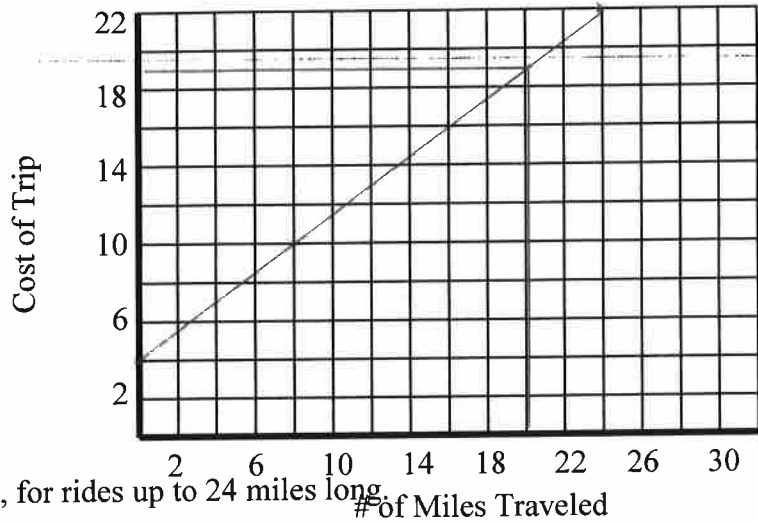
12. If 1 gallon of paint covers 450 sq ft, how many gallons are needed to paint a room with 675 sq ft of wall surface?

1.75 gallons are needed to paint 675 square feet of wall surface.

# 1<sup>st</sup> Semester Final Exam Review, Part 2

## Graph and Interpret Linear Functions

13. A radio-dispatched taxi company charges \$4.00 to pick up a passenger, then adds \$.75 per mile traveled to the destination.  
 The function that represents this situation is:  
 $C(m) = 0.75m + 4.00$ , where C represents the total cost and m represents the number of miles traveled.



Draw a graph that shows how much it will cost to hire this company, for rides up to 24 miles long.

Use your graph to estimate how far you can travel for \$19. **Clearly show your solution on the graph and state it below.**

For \$19, you can travel 20 miles.

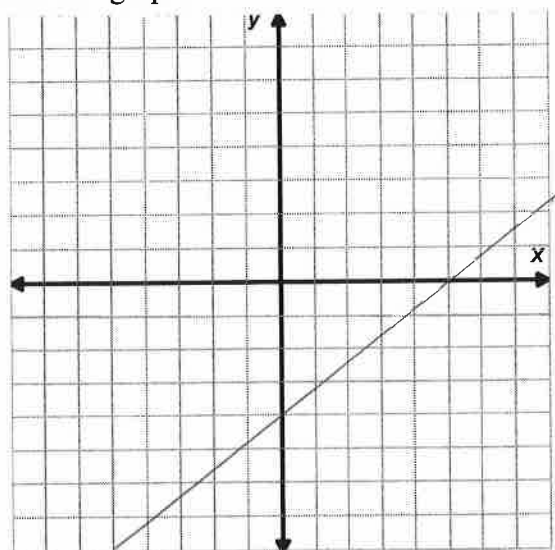
m	$C(m) = 0.75m + 4.00$	C
0		
6		
14		
18		
24		

## Graph linear equations

14. Write the following equation in slope-intercept form and graph.

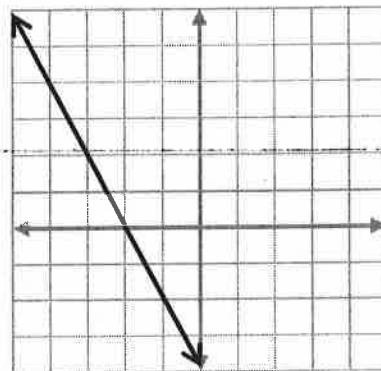
$$4x - 5y = 20$$

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



15. Find the equation of the line in slope-intercept form.

$$y = -2x - 4$$



### Write the Equation of a Line between Two Points

Given the slope and a point on the line or two points, write the equation in *slope-intercept* form.

16. (1, 2) and (-2, 5)

$$y = -x + 3$$

17.  $m = \frac{1}{2}$ , (-4, 3)

$$y = \frac{1}{2}x + 5$$

### Write an equation of a parallel and/or perpendicular line given an equation and a point.

18. Write the equation of a line parallel to  $2x + 3y = 12$  that passes through the point (-3, 4).

$$y = -\frac{2}{3}x + 2$$

19. Write the equation of a line perpendicular to  $y = 3x + 4$  that passes through the point (6, -4).

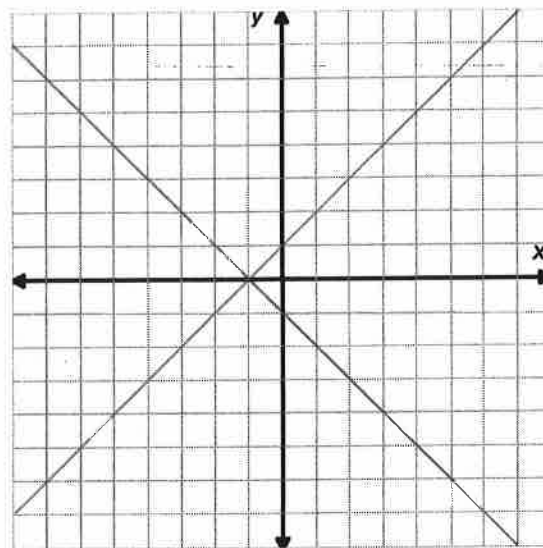
$$y = -\frac{1}{3}x - 2$$

### Solve a System by Graphing

Solve the system by graphing. Identify the point of intersection on your graph and check your solution.

20.  $y = -x - 1$   
 $y = x + 1$

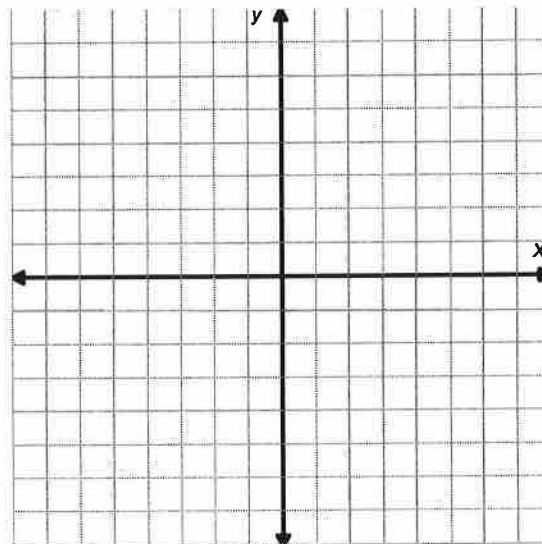
$(-1, 0)$



Solve the system by graphing. Identify one possible solution on your graph and check.

21.  $x - 2y \leq -4$   
 $4y < 2x - 4$

no solutions



### Solve a System of Linear Equations Algebraically

Solve the system of equations by the algebraic method of your choice. Check your solution.

22.  $d = 2c + 9$   
 $c + 2d = 8$

$$(-2, 5)$$

23.  $3x + 5y = 2x$   
 $x + 3y = y$

$$(0, 0)$$

24.  $5m + 2n = -8$   
 $4m + 3n = 2$

$$(-4, 6)$$

25.  $2x - 2y = -15$   
 $x = 5 - 4y$

$$(-5, 2.5)$$