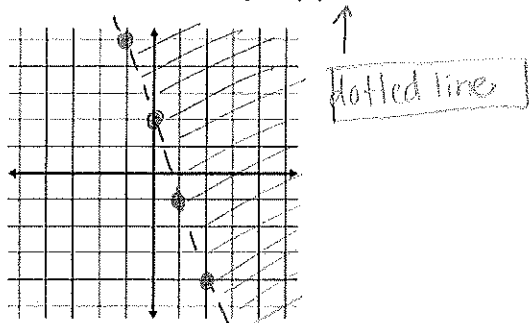


1. Graph the solutions to the inequality $y > -3x + 2$.



2. Four times a number is less than -8. Write an inequality statement, solve.

$$4x < -8 \rightarrow \boxed{x < -2}$$

3. You need to buy 9 notebooks but only have \$15 to spend. Write an inequality to represent the situation. Solve to see how much each notebook could cost. Let n = notebooks.

$$9n \leq 15 \quad \left. \begin{array}{l} \\ \\ \end{array} \right\} \begin{array}{l} \text{each one can} \\ \text{cost up to } \$1.67 \\ \text{\(\frac{15}{9}\)} \end{array}$$

$$\boxed{n \leq \frac{15}{9}}$$

4. Consider the following system.

$$\begin{cases} -3x + 2y = 10 \\ x + 4y = 2 \end{cases}$$

If you used elimination, what would you multiply each equation by to **eliminate the x**? (Just show, no need to solve)...

$$\begin{array}{l} -3x + 2y = 10 \quad \textcircled{1} \rightarrow -3x + 2y = 10 \\ x + 4y = 2 \quad \textcircled{3} \rightarrow 3x + 12y = 6 \end{array}$$

5. For what values of x is the inequality $\frac{-5x+4}{3} < -12$ true? Solve, show work.

$$\begin{array}{l} -5x + 4 < -12(3) \\ -5x < -40 \\ \boxed{x > 8} \end{array}$$

6. Linear functions $f(x)$ and $g(x)$ are displayed below. At what value does $f(x) = g(x)$?

*where will the graphs cross??

x	f(x)
-1	16
0	7
1	4
3	-2
5	-8
7	-14

x	g(x)
-1	-18
0	-14
1	-10
3	-2
5	6
7	14

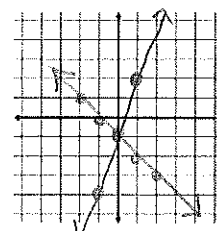
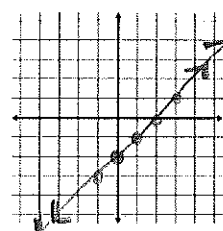
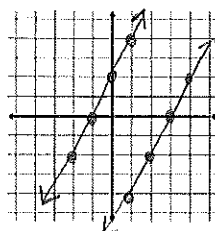
$(3, -2)$

7. Sketch an example of each situation (w/ system of equations):

No Solution

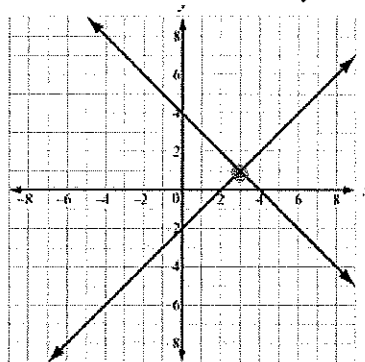
Infinitely Many Solutions

One Solution



Same 2 lines

8. What is the solution to this system of equations?



Solution
 $(3, 1)$

9. What is the first step in solving the inequality $-3x + 17 < 12$? Explain/show.

subtract 17 from both sides

10. Seven less than twice a number is 23. What is the number? Set up equation, solve.

$$2x - 7 = 23$$

$$\boxed{x = 15}$$

11. Solve each into slope-intercept form, then sketch graph.

A. $x + y < -3$

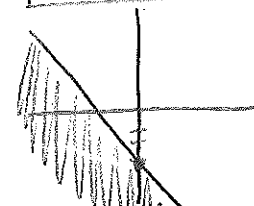
$$\boxed{y < -x - 3}$$

dashed



C. $x + y \leq -3$

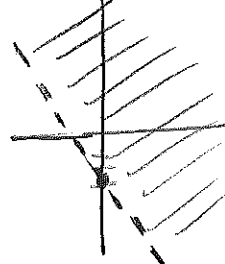
$$\boxed{y \leq -x - 3}$$



B. $x + y > -3$

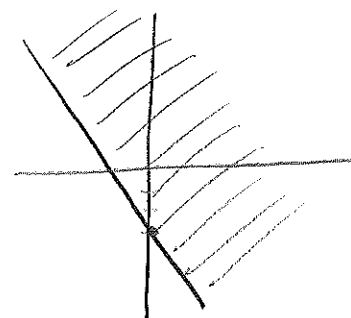
$$\boxed{y > -x - 3}$$

dashed



D. $x + y \geq -3$

$$\boxed{y \geq -x - 3}$$



12. You want to open a checking account at your local bank, which offers two options. A standard checking account charges \$11 plus \$1.75 for each check written. A select checking account charges \$8.25 plus \$2 for each check written.

Write a system of equations to represent the situation.

$$\left. \begin{array}{l} \text{Equation 1: } \$11 + 1.75x = y \\ \text{Equation 2: } \$8.25 + 2x = y \end{array} \right\}$$

13. What is the solution to the system of equations?
*use whatever method you!

$$\begin{cases} y = 5 + 3x \\ 1 - y = x \end{cases}$$

$$\begin{aligned} 1 - (5 + 3x) &= x & \left\{ \begin{array}{l} y = 5 + 3(-1) \\ = 5 - 3 = 2 \end{array} \right. \\ 1 - 5 - 3x &= x & \left\{ \begin{array}{l} \boxed{y = 2} \\ \text{*SOLUTION: } (-1, 2) \end{array} \right. \\ -4 &= 4x \\ \boxed{x = -1} & \end{aligned}$$

14. Provided:

- Alex purchased 5 adult ticket and 4 student tickets for a total of \$35
- Jen purchased 1 adult ticket and 5 student tickets for a total of \$40

Let a = cost of adult ticket, s = cost of student ticket

Write the two equations which could be used to solve this problem using elimination.

Equation 1: $5a + 4s = 35$

Equation 2: $1a + 5s = 40$

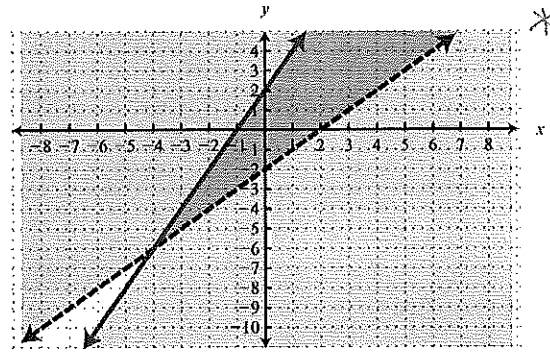
15. Rewrite the inequality into slope-intercept form. (Solve to isolate y)

$$\begin{array}{r} 6y - 3x \geq 9x - 18 \\ +3x +3x \end{array}$$

$$\frac{6y}{6} \geq \frac{12x - 18}{6}$$

* $\boxed{y \geq 2x - 3}$

16. List at least 3 different solutions (coordinate points) for the system of inequalities shown.



*answers vary

(0, 0) or (2, 0) or (-2, -3)

17. Which ordered pair is a solution of $4y + 1 = 2x - 7$?

- A. (-2, 2) B. (6, 5) C. (0, -2) D. (0, 0)

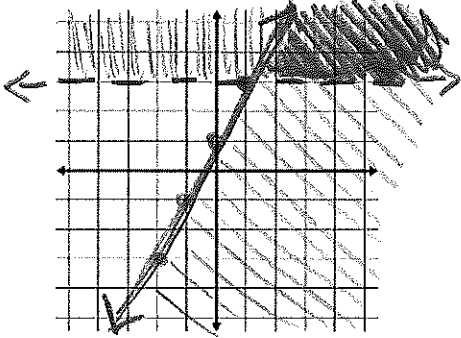
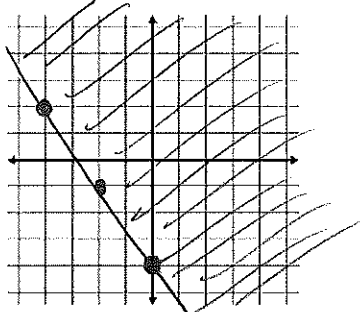
*plug + chug (replace x+y's)

18. When you solve for inequalities, when do you have to reverse the inequality sign? Explain.

If you multiply or divide by a negative!

19. Know definitions for:

- Coordinate plotted pt (x,y)
- Constant plain naked # (no variable)
- Coefficient # multiplied w/ variable
- Inequality Shows 2 items are NOT equal

<p>20. Solve the system below by any method you want. You MUST show work!</p> $y = -2x + 4$ $2x + y = 4$ <p style="margin-left: 40px;">↳ $y = -2x + 4$</p>	<p>same equation!</p> <p>Solution: (____, ____) or No solution or <u>Infinitely Many Solutions</u></p>				
<p>21. Graph the system of inequalities. Be sure to shade.</p> $\begin{cases} y \leq 2x + 1 \\ y > 3 \end{cases}$ <p style="margin-left: 40px;">dashed line</p>					
<p>22. Solve the system using elimination. <u>Explain</u> each step as you go.</p> $4x - 5y = 22$ $x + 2y = -1$ <p style="margin-left: 40px;">Eliminate x or y!!</p>	<table border="0" style="width: 100%;"> <tr> <td style="text-align: center; width: 50%;"><u>Work</u></td> <td style="text-align: center; width: 50%;"><u>Explanation</u></td> </tr> <tr> <td colspan="2" style="text-align: center; height: 100px; vertical-align: middle;"> <p style="font-size: 2em;">solution: (3, -2)</p> </td> </tr> </table>	<u>Work</u>	<u>Explanation</u>	<p style="font-size: 2em;">solution: (3, -2)</p>	
<u>Work</u>	<u>Explanation</u>				
<p style="font-size: 2em;">solution: (3, -2)</p>					
<p>23. <u>Graph and shade the inequality:</u></p> $y \geq -\frac{3}{2}x - 4$ <p style="margin-left: 40px;">- solid line - shade above "greater than"</p>					
<p>24. The dimensions of a rectangle are (-x+11) and (2x-3). Find its area.</p> <div style="margin-left: 40px;"> $\begin{array}{ c } \hline -x+11 \\ \hline 2x-3 \\ \hline \end{array}$ </div>	$(-x+11)(2x-3)$ $= -2x^2 + 25x - 33$				
<p>25. Albert is turning 39 years old. Convert his age to minutes.</p>	$39 \text{ yrs} \left \frac{525,600 \text{ min}}{1 \text{ yr}} = 20,498,400 \text{ min}$				

