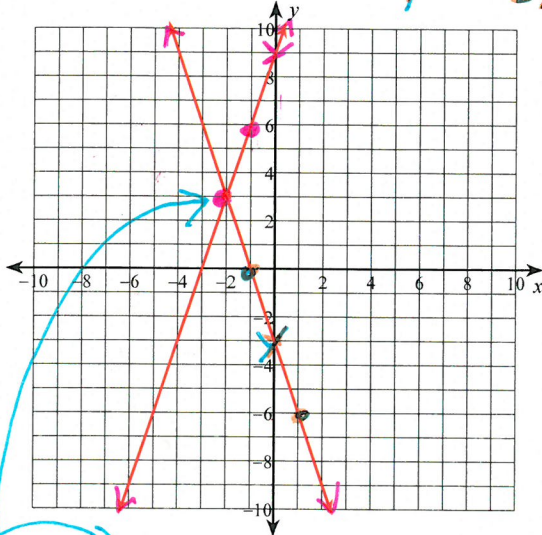


Chapter 7 Review

Solve the system by graphing; Check algebraically by show the last step.

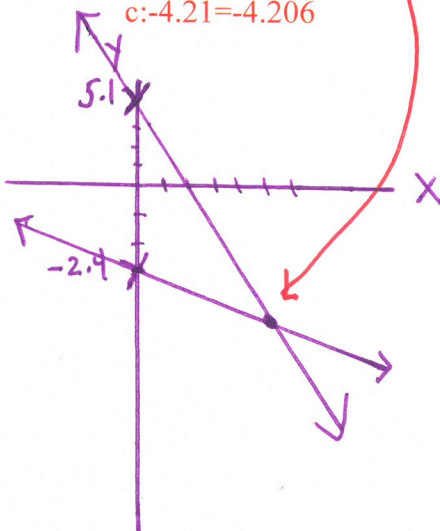
1) $-3y = -9x - 27$ $\rightarrow y = 3x + 9$
 $3x + 3 = -y$ $\rightarrow y = -3x - 3$



Solve each system by graphing. Clearly sketch a Graph. Label the POI rounded to 3 decimals. Check by show the last step rounded to 3 decimals.

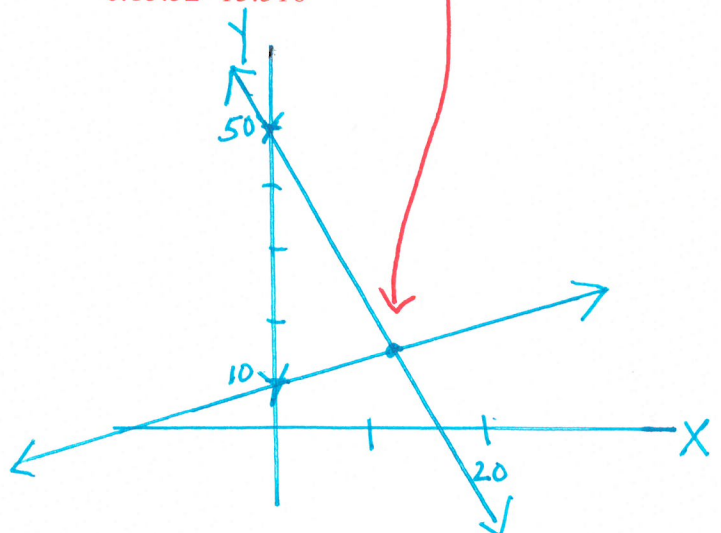
2) $y = -\frac{13}{9}x + \frac{56}{11}$ ~ 5.1
 $y = -\frac{9}{32}x - 2.395$

$(6.435, -4.205) \rightarrow$
 $(6.44, -4.21)$
 $c: -4.21 = -4.211$
 $c: -4.21 = -4.206$



3) $y = -2.5x + 50$
 $y = \frac{2}{5}x + 10$

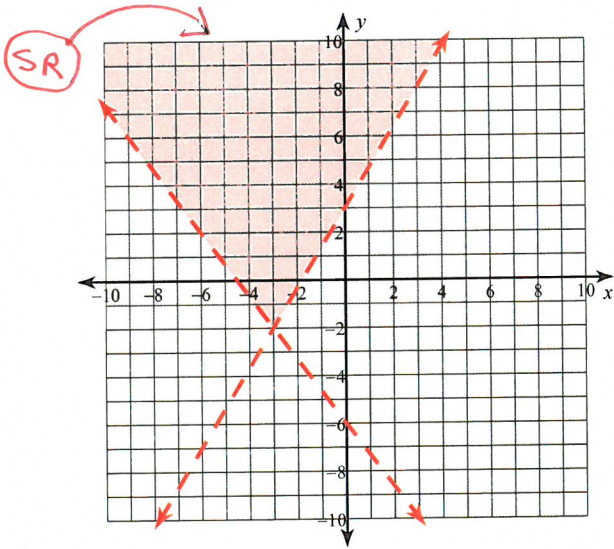
$(13.793, 15.517) \rightarrow$
 $(13.79, 15.52)$
 $c: 15.52 = 15.525$
 $c: 15.52 = 15.516$



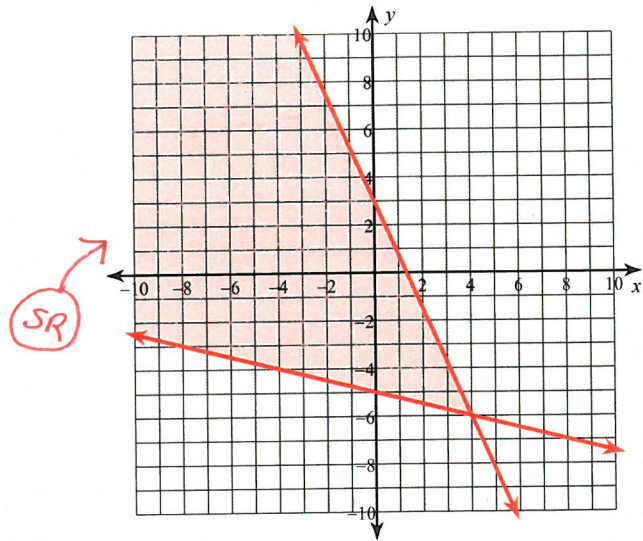
Sketch the solution to each system of inequalities.

4) $y > -\frac{4}{3}x - 6$ $T(0,0)$ $0 > -6$ (T)

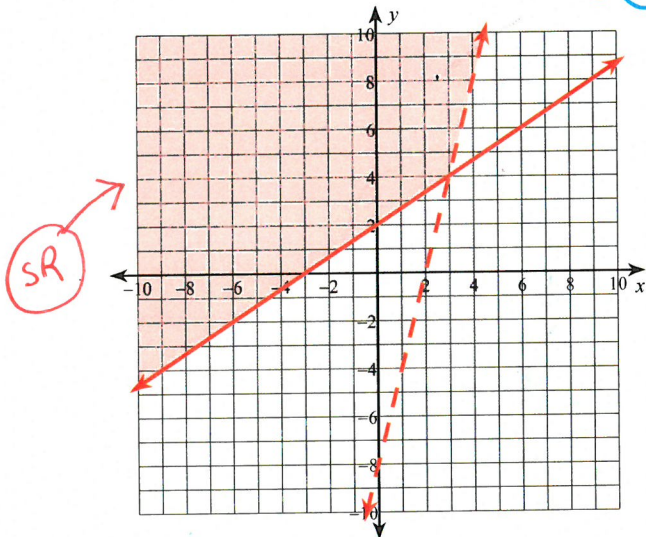
$y > \frac{5}{3}x + 3$ $T(0,0)$ $0 > 3$ (F)



5) $9x + 4y \leq 12$ $T(0,0)$ $0 \leq 12$ (T)
 $x + 4y \geq -20$ $T(0,0)$ $0 \geq -20$ (T)



6) $2x - 3y \leq -6$ $T(0,0)$ $0 \leq -6$ (F)
 $4x - y < 8$ $T(0,0)$ $0 < 8$ (T)



7) to review complete "HONORS 7.6T GRAPHING INEQUALITIES WITH 3+ INEQUALITIES"

Solve each system USING ANY METHOD. CHECK: show only the final step.

8) $2x + 10y = 20$
 $8x + y = 275$

$(35, -5)$

C: $20 = 20 \checkmark$

C: $275 = 275 \checkmark$

9) $-67x + 140y = 170$
 $-71x + 70y = -290$

$(10, 6)$

C: $170 = 170 \checkmark$

C: $-290 = -290 \checkmark$

10) $-20x = 60 - 15y$
 $-21y + 42x - 84 = 0$

$(12, 20)$

C: $-240 = -240 \checkmark$

C: $0 = 0 \checkmark$

$$11) \begin{aligned} 12 &= x + 2y \\ 3y - 27 &= \frac{3}{4}x \end{aligned}$$

$$\boxed{(-4, 8)}$$

$$\begin{aligned} C: 12 &= 12 \checkmark \\ C: -3 &= -3 \checkmark \end{aligned}$$

$$12) \begin{aligned} 0 &= 15x + 18y - 23 \\ -15x - 18y &= -15 \end{aligned}$$

No solution

$$\begin{array}{r} 0 \quad 0 \\ 15x + 18y = 23 \\ -15x - 18y = -15 \\ \hline \end{array}$$

$$0 \neq 8 \text{ (F)}$$

No SOLUTION

$$13) \begin{aligned} -10y &= 60 - 5x \\ x + 24 &= -10y \end{aligned}$$

$$\boxed{(6, -3)}$$

$$\begin{aligned} C: 30 &= 30 \checkmark \\ C: 30 &= 30 \checkmark \end{aligned}$$

$$14) \begin{aligned} 3x &= 8 - 4y \\ -3x + 8 - 4y &= 0 \end{aligned}$$

Infinite number of solutions

$$\begin{array}{r} 0 \quad 0 \quad 0 \\ 3x + 4y = 8 \\ -3x - 4y = -8 \\ \hline \end{array}$$

$$0 = 0 \text{ (T)}$$

INFINITE SOLUTIONS

- 15) The water park is a popular field trip destination. This year the senior class at High School A and the senior class at High School B both planned trips there. The senior class at High School A rented and filled 3 vans and 14 buses with 651 students. High School B rented and filled 9 vans and 11 buses with 558 students. Every van had the same number of students in it as did the buses. How many students can a van carry? How many students can a bus carry?

Define variables: $X = \underline{\# \text{ STUDENTS PER VAN}}$
 $Y = \underline{\# \text{ STUDENTS PER BUS}}$

Define system: EQ1: HSA: $3X + 14Y = 651$

EQ2: HSB: $9X + 11Y = 558$

Solve the system:

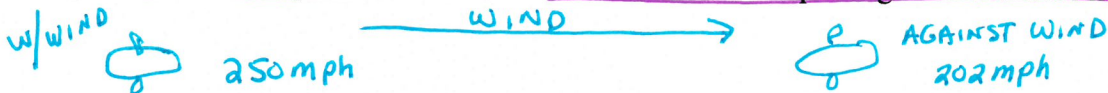
$$\left. \begin{array}{l} \text{EQ1: } 3X + 14Y = 651 \\ \text{EQ2: } 9X + 11Y = 558 \end{array} \right\}$$

$$X = 7 \qquad Y = 45$$

Answer (in words):

Van: 7, Bus: 45 → 7 students per van and 45 students per bus

- 16) Flying with the wind a plane went 250 mph. Flying into the same wind the plane only went 202 mph. What is the speed of the wind? How fast would the plane go if there were no wind?



Define variables: $X = \underline{\text{speed of plane (mph)}}$
 $Y = \underline{\text{speed of WIND (mph)}}$

Define system: EQ1: w/wind $X + Y = 250$

EQ2: AGAINST WIND $X - Y = 202$

Solve the system:

$$\left. \begin{array}{l} \text{EQ1: } X + Y = 250 \\ \text{EQ2: } X - Y = 202 \end{array} \right\}$$

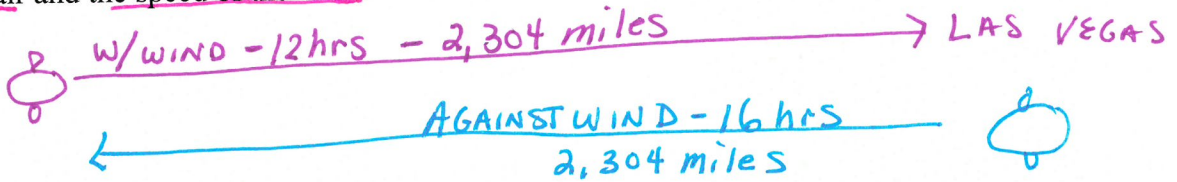
$$X = 226 \qquad Y = 24$$

Answer (in words):

Plane: 226 mph, Wind: 24 mph

17) HONORS EXTRA CREDIT PROBLEM:

A plane traveled 2304 miles to Las Vegas and back. The trip there was with the wind. It took 12 hours. The trip back was into the wind. The trip back took 16 hours. Find the speed of the plane in still air and the speed of the wind.



See Ms Graves for help

Define variables: X= _____

Y= _____

Define system:

EQ1: _____

EQ2: _____

Solve the system:

Answer (in words):

plane: 168 mph, wind: 24 mph