

Textbook: p.232-233

#6 and #7 → Graph BELOW

#24 - #25 → Graph BELOW

COMPLETE THE FOLLOWING ON NOTEBOOK PAPER!

#10 - #12 → Classify (Make sure you know this vocabulary!)

#14 → Solve by Substitution or Elimination

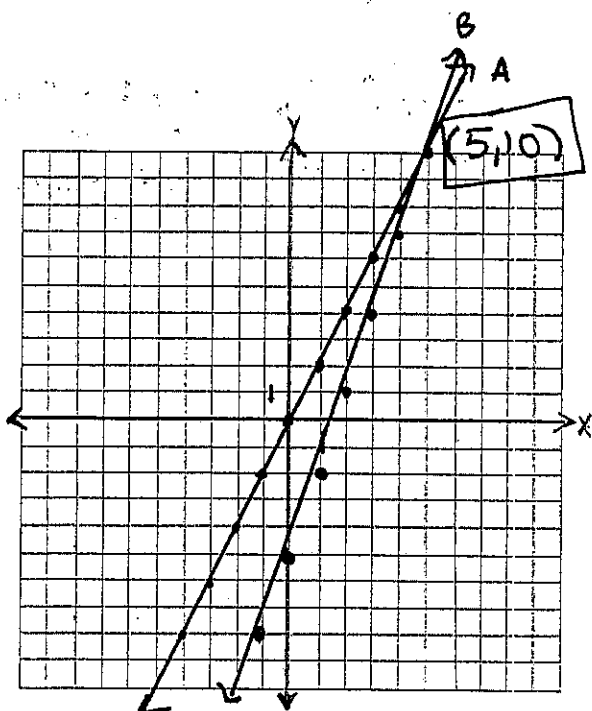
#16 and #17 → Solve by Substitution

#19 and #21 → Solve by Elimination

Additional Questions:

#1 and #2 → On the back of this paper.

6.

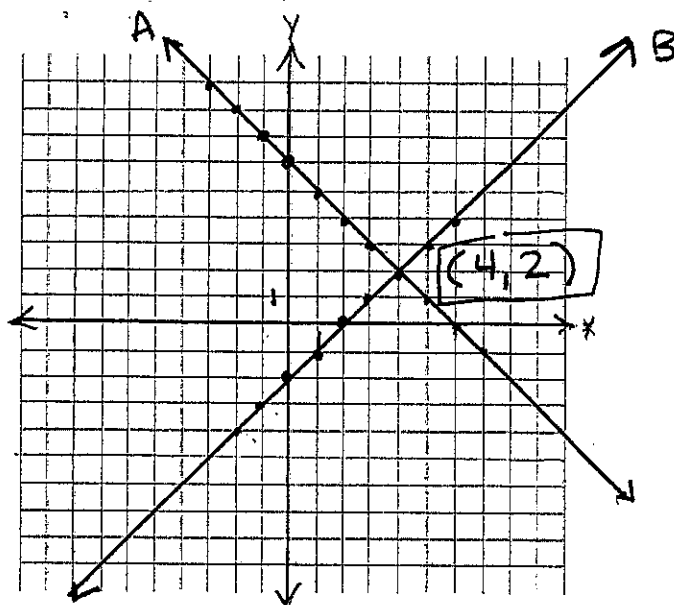


A.  $y = 2x$

B.  $3x - y = 5$  ( $3x - 5 = y$ )

$$\begin{array}{r} 3x - y = 5 \\ -3x \quad -3x \\ \hline -y = -3x + 5 \\ \frac{-y}{-1} = \frac{-3x + 5}{-1} \\ y = 3x - 5 \end{array}$$

7.

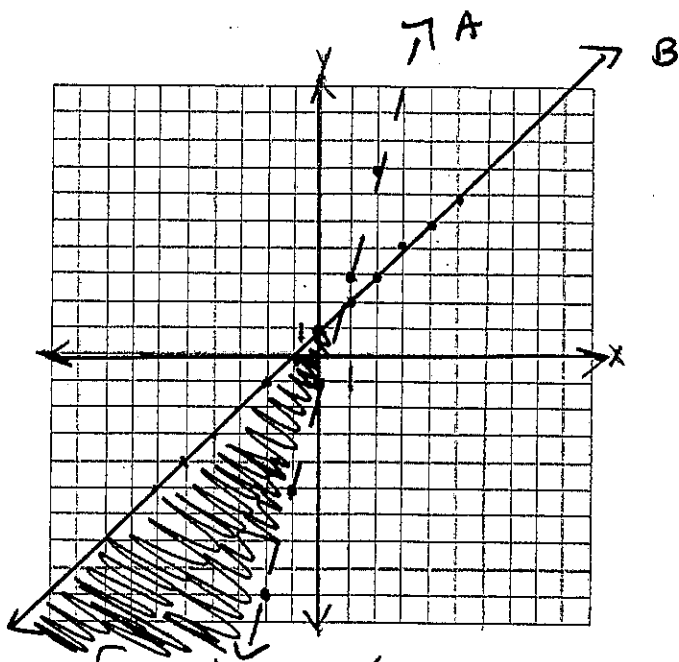


A.  $x + y = 6$  ( $y = -x + 6$ )

B.  $x - y = 2$  ( $y = x - 2$ )

$$\begin{array}{r} x + y = 6 \\ -x \quad -x \\ \hline y = -x + 6 \end{array} \quad \begin{array}{r} x - y = 2 \\ -x \quad -x \\ \hline -y = -x + 2 \\ \frac{-y}{-1} = \frac{-x + 2}{-1} \\ y = x - 2 \end{array}$$

24.



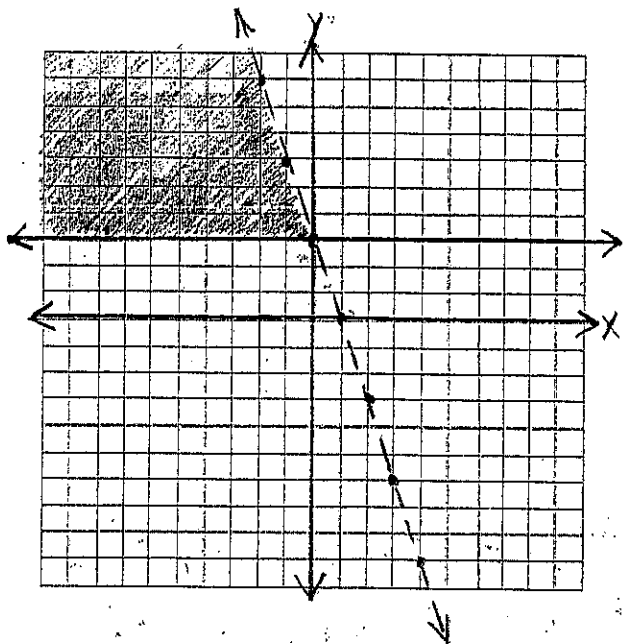
$$A \begin{cases} y+1 > 4x & (y > 4x-1) \\ B \begin{cases} y \leq x+1 \end{cases}$$

$$\frac{y+1}{-1} > \frac{4x}{-1} \quad y > 4x-1$$

COMPLETE THE FOLLOWING:

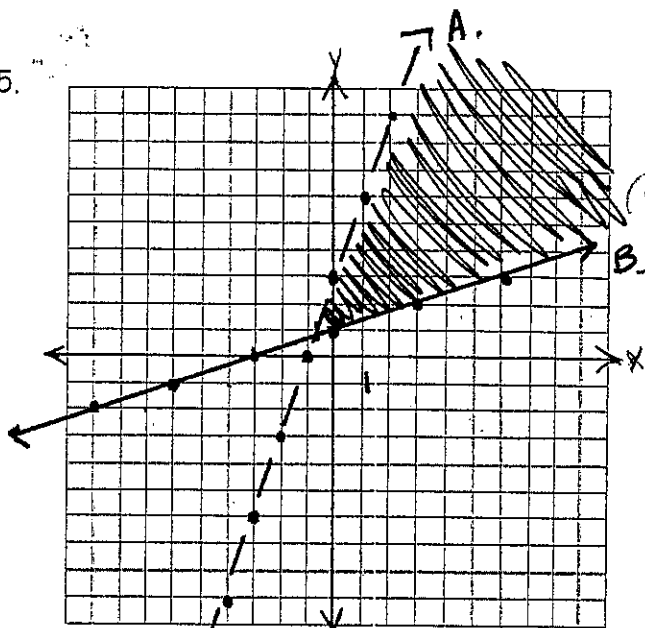
Write the system of inequalities that represents each graph.

1.



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

25.



$$A \begin{cases} y-3x < 3 & (y < 3x+3) \\ B \begin{cases} 3y \geq x+3 & (y \geq \frac{1}{3}x+1) \end{cases}$$

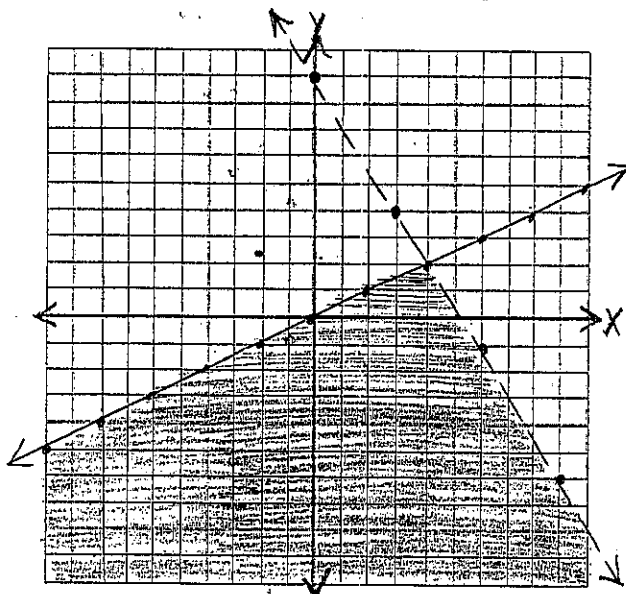
$$\frac{y-3x}{+3x} < \frac{3}{+3x}$$

$$y < 3x+3$$

$$\frac{3y}{3} \geq \frac{x+3}{3}$$

$$y \geq \frac{1}{3}x+1$$

2.



$$\begin{cases} y \leq \frac{1}{2}x \\ y < -\frac{5}{3}x+9 \end{cases}$$

10.)  $y = x - 7$

$$\begin{array}{r} x + 9y = 16 \text{ (solve for } y\text{)} \\ -x \qquad -x \\ \hline \end{array}$$

$$\frac{9y}{9} = \frac{-x + 16}{9}$$

$$\boxed{y = -\frac{1}{9}x + \frac{16}{9}}$$
$$\boxed{y = x - 7}$$

→ Consistent independent (one solution)

12.)  $5x - 10y = 8$  (solve for  $y$ )

$$\begin{array}{r} -5x \qquad -5x \\ \hline -10y = -5x + 8 \\ -10 \qquad -10 \qquad -10 \end{array}$$

$$\boxed{y = \frac{1}{2}x - \frac{4}{5}}$$

$$\begin{array}{r} x - 2y = 4 \text{ (solve for } y\text{)} \\ -x \qquad -x \\ \hline \end{array}$$

$$\frac{-2y}{-2} = \frac{-x + 4}{-2}$$

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

Inconsistent (no solution)

11.)  $\frac{1}{2}x + 2y = 3$  (solve for  $y$ )

$$\begin{array}{r} -\frac{1}{2}x \qquad -\frac{1}{2}x \\ \hline 2y = -\frac{1}{2}x + 3 \\ 2 \qquad 2 \qquad 2 \end{array}$$

$$\boxed{y = -\frac{1}{4}x + \frac{3}{2}}$$

$$\begin{array}{r} x + 4y = 6 \text{ (solve for } y\text{)} \\ -x \qquad -x \\ \hline 4y = -x + 6 \\ 4 \qquad 4 \qquad 4 \end{array}$$

$$\boxed{y = \frac{1}{4}x + \frac{3}{2}}$$

Consistent, dependent (infinitely many solutions)

$$14.) \quad \begin{array}{l} x = \# \text{ of locks} \\ y = \text{cost} \end{array} \quad \begin{array}{l} y = 15x + 25 \\ y = 20x + 10 \end{array}$$

$$\begin{array}{r} 15x + 25 = 20x + 10 \\ -15x \quad -15x \\ \hline \end{array}$$

$$\begin{array}{r} 25 = 5x + 10 \\ -10 \quad -10 \\ \hline \end{array}$$

$$\frac{15}{5} = \frac{5x}{5}$$

$$x = 3$$

**3 locks**

$$16.) \quad \begin{array}{l} y = x - 1 \\ 4x - y = 19 \end{array}$$

$$4x - (x - 1) = 19$$

$$\begin{array}{r} 4x - x + 1 = 19 \\ = \quad = \end{array}$$

$$3x + 1 = 19$$

$$\begin{array}{r} -1 \quad -1 \\ \hline \end{array}$$

$$\frac{3x}{3} = \frac{18}{3}$$

$$x = 6$$

$$\begin{array}{l} y = x - 1 \\ = 6 - 1 \\ y = 5 \end{array}$$

**(6, 5)**

$$17.) \quad \begin{array}{l} 4x - y = 0 \\ 6x - 3y = 12 \end{array}$$

$$6x - 3(4x) = 12$$

$$6x - 12x = 12$$

$$\begin{array}{r} -6x = 12 \\ -6 \quad -6 \\ \hline \end{array}$$

$$x = -2$$

$$\begin{array}{l} y = 4x \\ = 4(-2) \end{array}$$

$$y = -8$$

**(-2, -8)**

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

$$\begin{array}{r} -y = -4x \\ -1 \quad -1 \\ \hline \end{array}$$

$$y = 4x$$

$$19.) \quad \begin{array}{l} 4x + 5y = 41 \\ 7x + 5y = 53 \end{array}$$

$$\begin{array}{r} -4x - 5y = -41 \\ 7x + 5y = 53 \\ \hline \end{array}$$

$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$

$$7x + 5y = 53$$

$$7(4) + 5y = 53$$

$$\begin{array}{r} 28 + 5y = 53 \\ -28 \quad -28 \\ \hline \end{array}$$

$$\frac{5y}{5} = \frac{25}{5}$$

$$y = 5$$

**(4, 5)**

$$21.) \quad \begin{array}{l} (2x - y = 8)^2 \\ x + 2y = 9 \end{array}$$

$$\begin{array}{r} 4x - 2y = 16 \\ x + 2y = 9 \\ \hline \end{array}$$

$$\frac{5x}{5} = \frac{25}{5}$$

$$x = 5$$

$$x + 2y = 9$$

$$5 + 2y = 9$$

$$\begin{array}{r} -5 \quad -5 \\ \hline \end{array}$$

$$2y = 4$$

$$\frac{2}{2} = \frac{4}{2}$$

$$y = 2$$

**(5, 2)**