Geometry: Ch 13 Group Review **Name** Key **Row #** ____

a. **Name the sets to which each number belong.**

a. $\sqrt{30}$ Q'R

b. -2 ZQR

c. 0.35 QR

d. 0 N_0ZQR

e. $\frac{25}{5}$ NN$_0$ZQR

f. Π Q'R

2. **Find the following if…**

A = {1, 3, 5, 7, 9, 11}

B = {2, 4, 6, 8, 10}

C = {0, 1, 3, 10}.

a. $A \cap B =$ $\emptyset$

b. $A \cup C =$ {0,1,3,5,7,9,10,11}

c. $(A \cap C) \cup B =$ {1,2,3,4,6,8,10}

3. **Write an equation of a line with the following conditions:**

a. Through (2, 3) and (4, 1)

$y = -x + 5$

b. Through (1, -2) and perpendicular to 2x – 3y = 6

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

#3 continued…

d. Through (7, 9) and parallel to 4x + 8y = 12

$y = -\frac{1}{2}x + \frac{25}{2}$

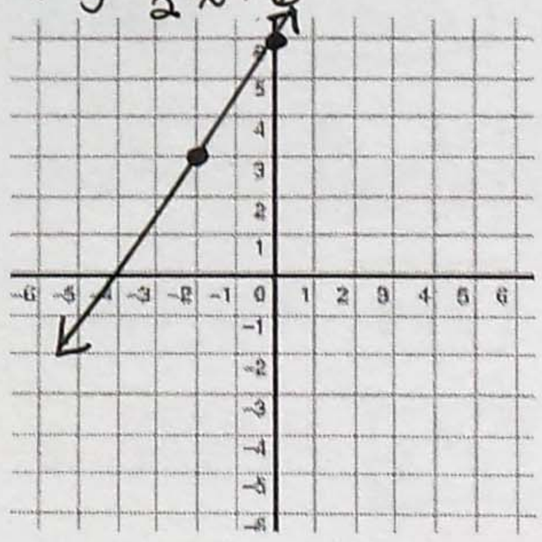
e. Perpendicular bisector of (2, 1) and (4, 5)

$y = -\frac{1}{2}x + \frac{11}{2}$

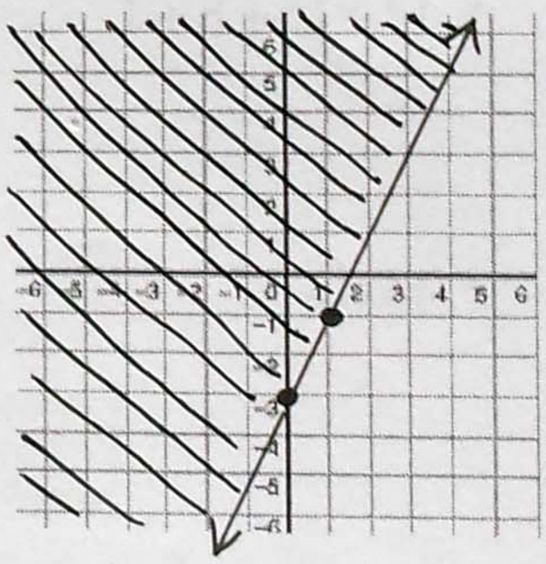
4. **Graph the following:**

a. 3x – 2y = -12

$\rightarrow y = \frac{3}{2}x + 6$

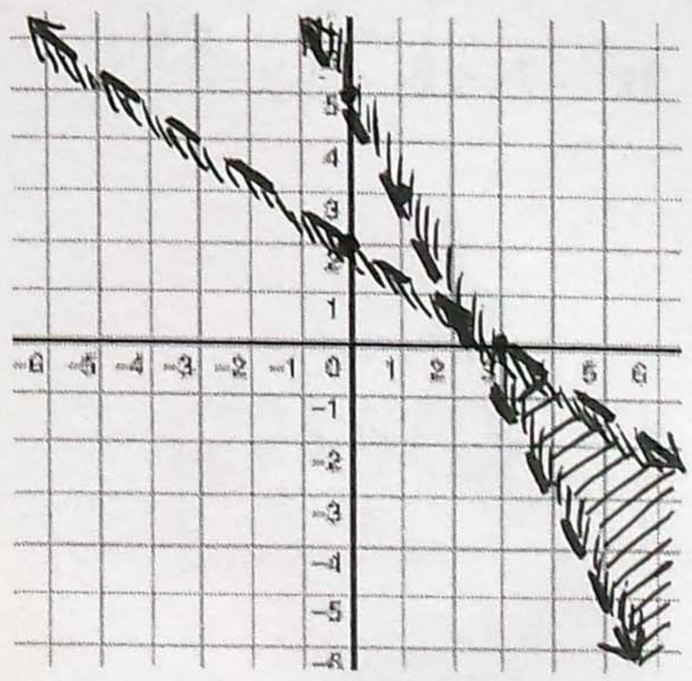


b. $y \geq 2x - 3$



c. $\begin{cases} 2x + 3y < 6 \\ 2x + y > 5 \end{cases}$

$\rightarrow \begin{cases} y < -\frac{2}{3}x + 2 \\ y > -2x + 5 \end{cases}$



se the systems by…

a. Substitution $\begin{cases} 5x + y = 14 \\ 2x + y = 5 \end{cases}$

(3,-1)

b. Elimination $\begin{cases} 8x + 5y = -13 \\ 3x + 2y = 1 \end{cases}$

(-31,47)

6. **Factor completely**:

a. $25x^2 - 25x - 36$

$(5x-9)(5x+4)$

b. $b^3 + b^2 + b + 1$

$(b^2+1)(b+1)$

c. $16x^4 - y^4$

$(4x^2+y^2)(2x-y)(2x+y)$

d. $2x^2 - 7x + 3$

$(x-3)(2x-1)$

e. $3x^3 + 6x^2 - 3x - 6$

$3(x+1)(x-1)(x+2)$

7. **Solve for the given variable by…**

a. Factoring and using zero product property:

$x^2 - 12x + 36 = 0$

$x=6$

b. Quadratic formula: $6x^2 + 7x = 3$

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

c. Your choice: $x^2 - 7x + 5 = 0$

$x = \frac{7 \pm \sqrt{29}}{2}$

8. **Simplify completely**:

a. $\sqrt{675}$ $15\sqrt{3}$

b. $\sqrt{45x^6y^2}$ $3x^3y\sqrt{5}$

c. $2\sqrt{2} \cdot 2\sqrt{6}$ $8\sqrt{3}$

d. $\sqrt{x^{10}y^{15}z^{21}}$ $x^5y^7z^{10}\sqrt{yz}$

e. $\sqrt{24x^3y} \cdot \sqrt{20x^5y}$ $4x^4y\sqrt{30}$

9. **Solve.**

a. $|3x + 2| \leq 10$

$x \leq \frac{8}{3}$ AND $x \geq -4$

b. $|6x + 10| = 5$

$x = \frac{-5}{6}$ AND $\frac{-5}{2}$