

BE - Alg. 2

Monday 9-19-11

- ① Find the area and circumference of a circle of diameter 18 miles. To nearest tenth.
-

ACT
KMS
JWC09

- ② For what value of a would the following system of equations have an infinite number of solutions?

$$\begin{aligned} 2x - y &= 8 \\ 6x - 3y &= 4a \end{aligned}$$

$$\textcircled{1} A_0 = \pi r^2 = 3.14(9)^2 \Rightarrow \begin{array}{r} 3.14 \\ \times 81 \\ \hline 314 \\ 2512 \\ \hline 254.34 \end{array}$$

$$C = 2\pi r = 6.28(9)$$

$$\begin{array}{r} \times 9 \\ \hline 56.52 \text{ mi} \end{array}$$

$$\textcircled{2} 3(2x - y) = 8 \cdot 3$$

$$6x - 3y = 24$$

$$\begin{array}{r} 11 \\ 4a \end{array} \therefore \boxed{a = 6}$$

Homework review: Pg. 120 # 13, 14, 19, 20,
25, 26, 27.

$$\textcircled{13} \quad \boxed{(9, 5)}$$

$$\textcircled{14} \quad \boxed{(2, 7)}$$

$$\textcircled{19} \quad \boxed{(4, 3)}$$

$$\textcircled{20} \quad \boxed{(-1, 8)}$$

$$\textcircled{25} \quad \boxed{(4, -3)} \quad \text{EBA}$$

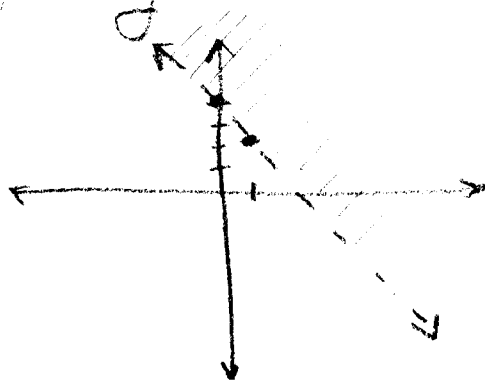
$$\textcircled{26} \quad \boxed{(6, 5)} \quad \text{EBA}$$

$$\textcircled{27} \quad \boxed{(-8, -3)} \quad \text{EBA}$$

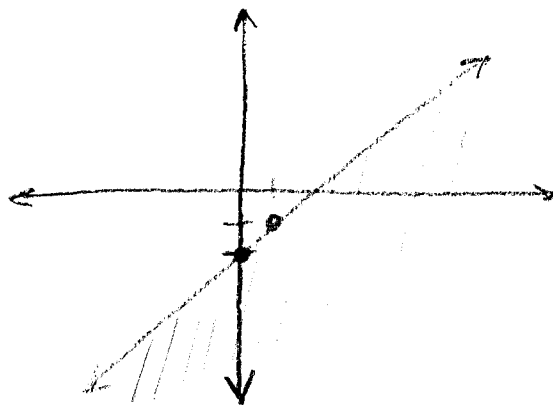
GRAPHING INEQUALITIES $\Rightarrow$

- ① If necessary, change to $y = mx + b$ form
- ② Graph " $y =$ " boundary line: $<, >, \text{-----}$
 $\leq, \geq \text{-----}$
- ③ Shade correct or "true" half-plane region

EX GRAPH $y > -2x + 4$



EX GRAPH $2 + y \leq x$
 $y \leq x - 2$



GRAPHING A SYSTEM OF LINEAR INEQUALITIES

⇒ GRAPH each linear inequality

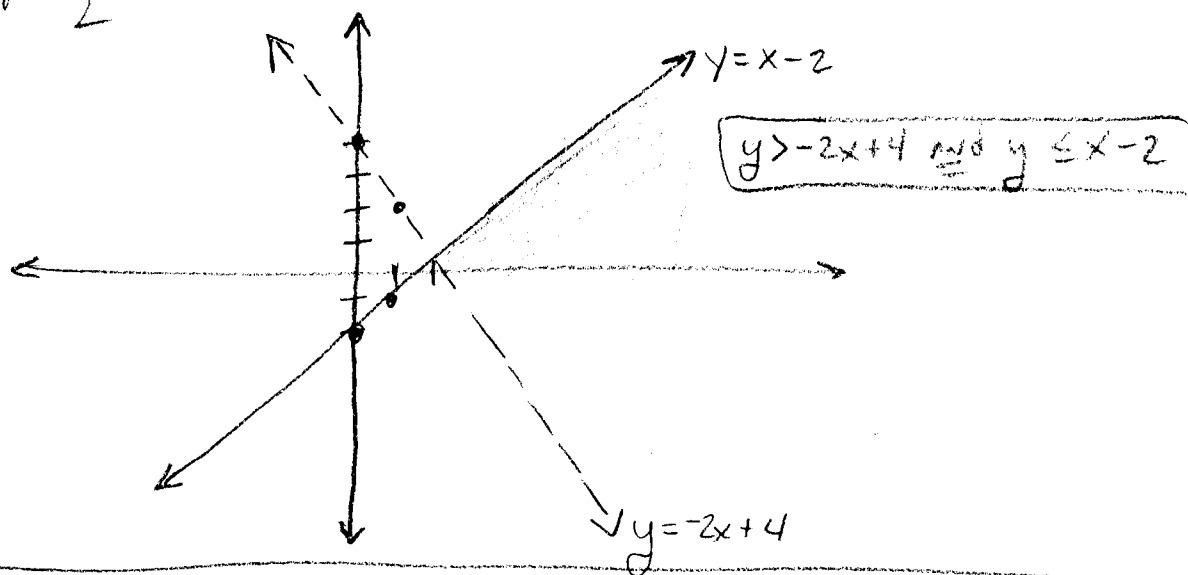
• SHADE "true" region (meets ALL inequalities)

(EX)
1A Pg 123

Ch 3-3

Solving Inequalities
By Graphing

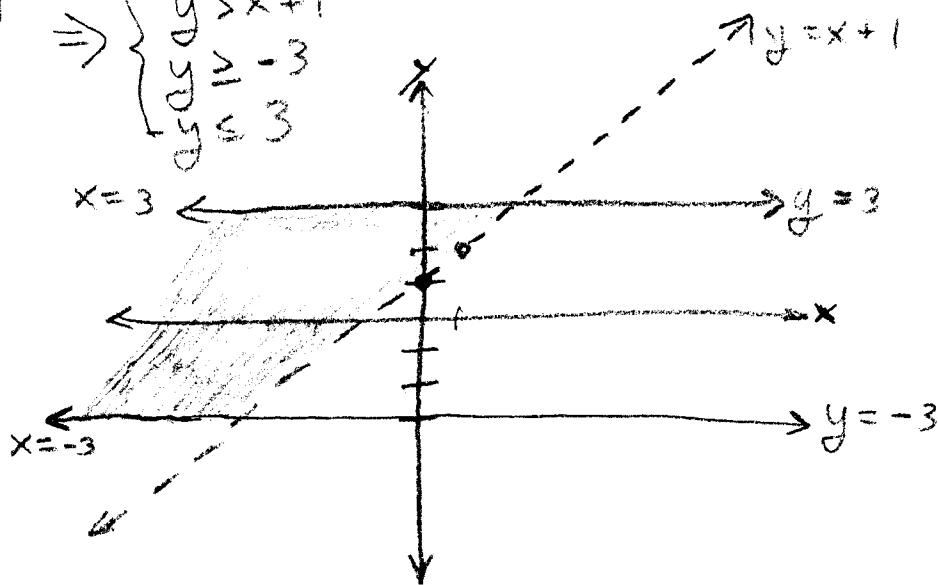
$$\begin{cases} y > -2x + 4 \\ y \leq x - 2 \end{cases}$$



(EX 1B) $\begin{cases} y > x + 1 \\ |y| \leq 3 \end{cases} \Rightarrow \begin{cases} y > x + 1 \\ y \geq -3 \\ y \leq 3 \end{cases}$

Diagram illustrating the absolute value inequality $|y| \leq 3$:

$$|y| \leq 3 \Rightarrow \begin{cases} y \leq 3 \\ -(y) \leq 3 \\ y \geq -3 \end{cases}$$



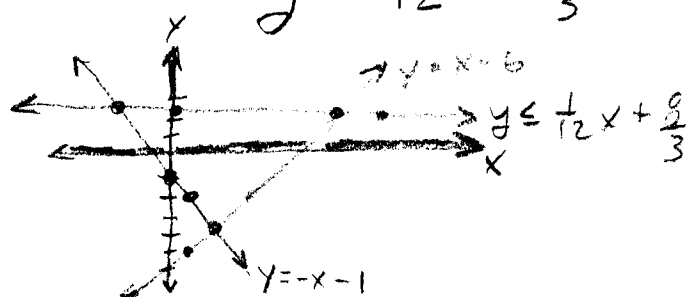
Pg. 124 Finding Vertices of a Polygonal Region

See Ex 4 (points where lines cross) (many straight sides)

Find the vertices of the figure formed

by $\begin{cases} x+y \geq -1 \\ x-y \leq 6 \\ 12y+x \leq 32 \end{cases} \Rightarrow \begin{cases} y \geq -x-1 \\ y \leq x-6 \\ y \leq \frac{1}{12}x + \frac{8}{3} \end{cases}$

$$\begin{cases} \frac{32}{12} = \frac{8}{3} \\ = 2\frac{2}{3} \end{cases}$$



$$\begin{cases} y = x-6 \\ 12y+x=32 \end{cases}$$

$$12(x-6)+x=32$$

$$12x-72+x=32$$

$$13x=104$$

$$x=8 \therefore y=2$$

$$\begin{pmatrix} 13 \\ \times 8 \\ \hline 104 \end{pmatrix}$$

$$\text{QI Vertex} = (8, 2)$$

$$\begin{cases} y = x-6 \\ y = -x-1 \end{cases}$$

$$-x-1=x-6$$

$$5=2x$$

$$x = \frac{5}{2}$$

$$\therefore y = \frac{5}{2} - \frac{12}{2} = \left(-\frac{7}{2}\right) = -3\frac{1}{2}$$

$$\text{QIV Vertex} = \left(\frac{5}{2}, -\frac{7}{2}\right)$$

$$\begin{cases} y = -x-1 \rightarrow y+x = -1 \xrightarrow{(-1)} -y-x = 1 \\ 12y+x=32 \rightarrow 12y+x=32 \xrightarrow{+} 12y+x=32 \end{cases}$$

$$11y = 33 \therefore y = 3$$

$$x = -4$$

$$\text{QII Vertex} = (-4, 3)$$

Homework: Pg 125 # 4, 5, 6, 8, 9