

## 6.2 Foundations of Math II

P. 307 #1, 2

1. a) For each inequality graphed the domain is  $x \in \mathbb{R}$  and the range is  $y \in \mathbb{R}$ .  
For the dark green solution, the domain is  $x \geq -1$ ,  $x \in \mathbb{R}$  and the range is  $y \in \mathbb{R}$
- b) For each inequality graphed the domain is  $x \in \mathbb{I}$  and the range is  $y \in \mathbb{I}$ .  
For the dark green points in the solution, the domain is  $x \leq -2$ ,  $x \in \mathbb{I}$  and the range is  $y \in \mathbb{I}$
- c) For each inequality graphed the domain is  $x \in \mathbb{I}$  and the range is  $y \in \mathbb{I}$ .  
For the dark green points in the solution, the domain is  $x \in \mathbb{I}$  and the range is  $y \geq 1$ ,  $y \in \mathbb{I}$

p. 307 cont.

2. a)  $\{(x,y) \mid x+2y \geq 4, x \in \mathbb{R}, y \in \mathbb{R}\}$   
 $\{(x,y) \mid y \geq x, x \in \mathbb{R}, y \in \mathbb{R}\}$

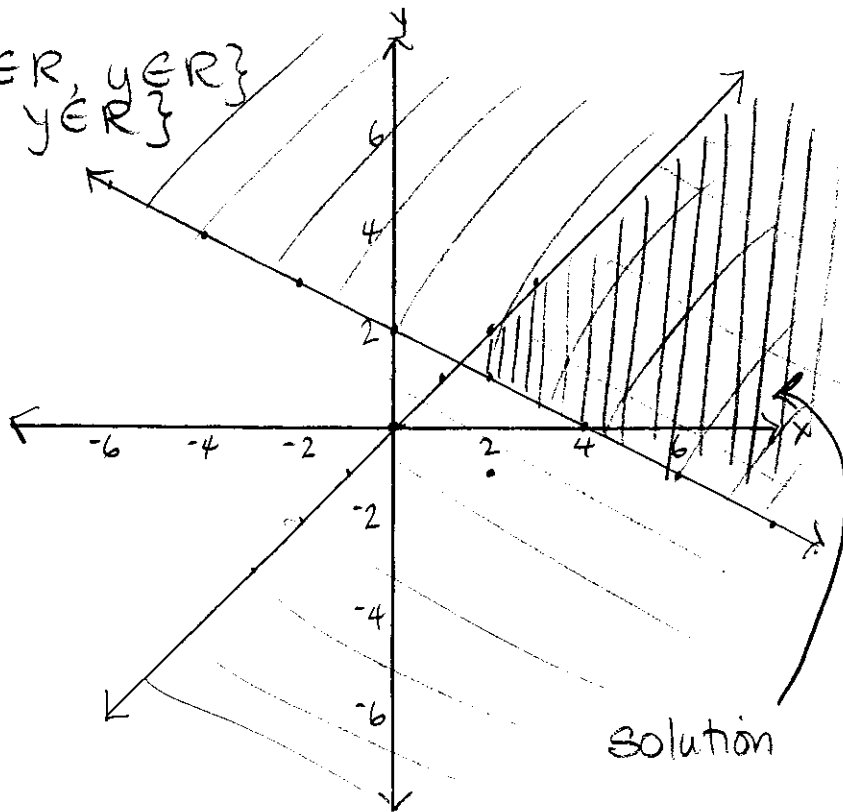
①  $x+2y \geq 4$   
 $2y \geq -x+4$   
 $y \geq -\frac{1}{2}x+2$

②  $y \geq x$

① (0,0)  $0+2 \cdot 0 \geq 4$   
 $0+0 \geq 4$   
 $0 \geq 4$  false

② (-2,-1)  $-1 \geq -2$  true

cannot be on the line!!



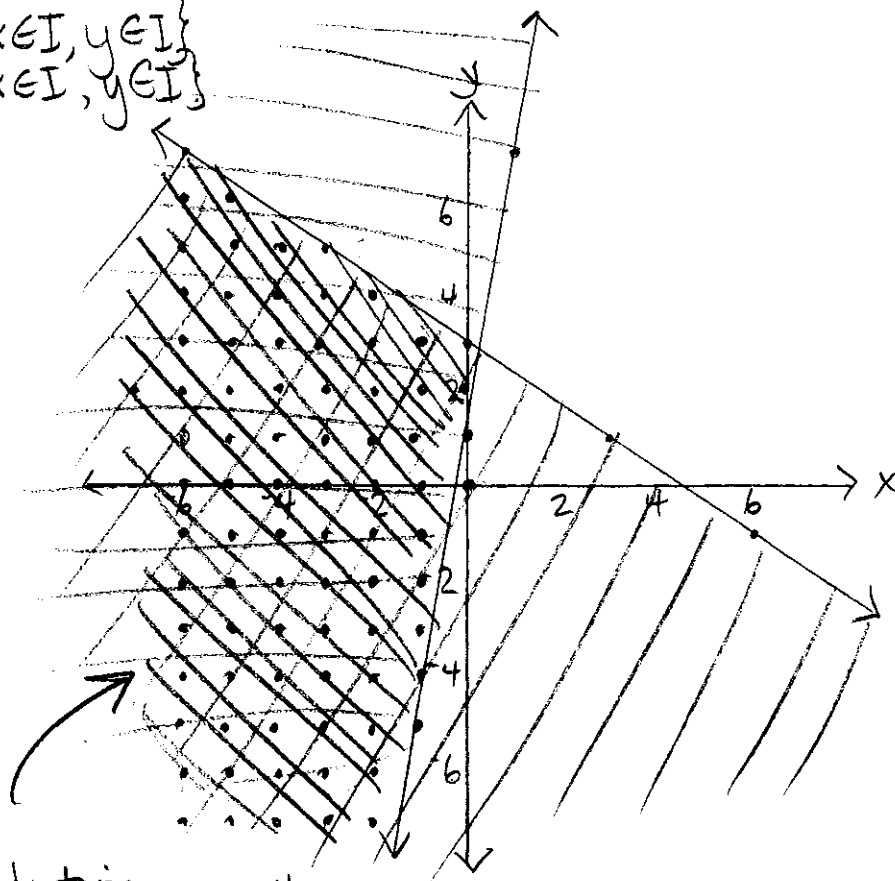
b)  $\{(x,y) \mid 2x+3y \leq 9, x \in \mathbb{I}, y \in \mathbb{I}\}$   
 $\{(x,y) \mid y-6x \geq 1, x \in \mathbb{I}, y \in \mathbb{I}\}$

①  $2x+3y \leq 9$   
 $3y \leq -2x+9$   
 $y \leq -\frac{2}{3}x+3$

②  $y-6x \geq 1$   
 $y \geq 6x+1$

① (0,0)  $2 \cdot 0 + 3 \cdot 0 \leq 9$   
 $0+0 \leq 9$   
 $0 \leq 9$  true

② (0,0)  $0-6 \cdot 0 \geq 1$   
 $0-0 \geq 1$   
 $0 \geq 1$  false



Solution-points