

Extra Practice

1. $5x \leq 24$

$$x \leq \frac{24}{5}$$

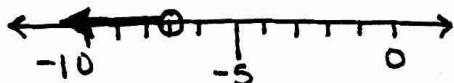
$$(-\infty, 24/5]$$



2. $x+5 < -2$

$$x < -7$$

$$(-\infty, -7)$$



3. $2|x-3| \geq 10$

$$|x-3| \geq 5$$

$$x-3 \geq 5$$

$$x \geq 8$$

$$x-3 \leq -5$$

$$x \leq -2$$



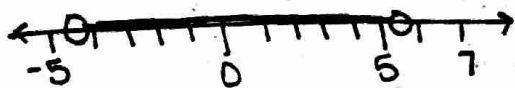
$$(-\infty, -2] \cup [8, \infty)$$

4. $-10 < 2x-1 < 10$

$$-9 < 2x < 11$$

$$-9/2 < x < 11/2$$

$$(-9/2, 11/2)$$

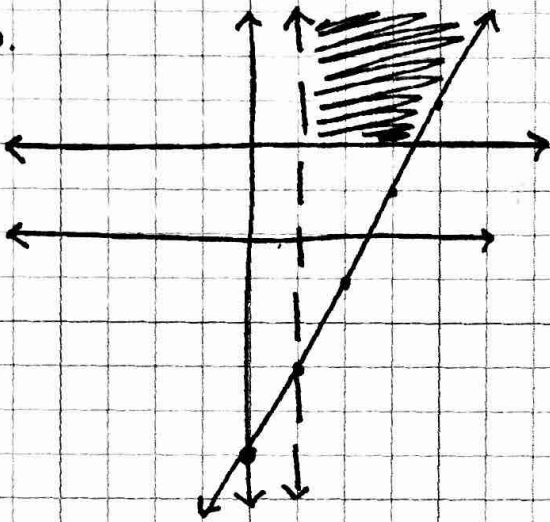


5. see next page

6. $y \geq x-5$

$$y < -2x+4$$

5.



$$\begin{aligned} -y &\leq -2x + 5 \\ y &\geq 2x - 5 \end{aligned}$$

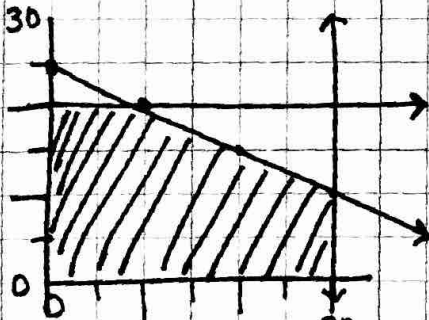
Linear programming questions

1. $x \rightarrow$ jean jackets
 $y \rightarrow$ leather jackets

$$\begin{aligned} x &\leq 30 & x &\geq 0 \} \text{QI} \\ y &\leq 20 & y &\geq 0 \} \end{aligned}$$

$$10x + 20y \leq 500 \rightarrow y \leq -\frac{1}{2}x + 25$$

$$P = 20x + 50y$$



$(0, 20), (10, 20), (30, 10), (30, 0)$

$$P = 20(0) + 50(20) = 1000$$

$$P = 20(10) + 50(20) = 1200 \star$$

$$P = 20(30) + 50(10) = 1100$$

$$P = 20(30) + 50(0) = 600$$

*make 10 jean jackets & 20 leather jackets

2. $x \rightarrow$ wheat
 $y \rightarrow$ rye

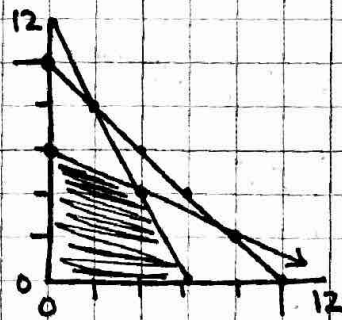
$$x \geq 0, y \geq 0 \} \text{QI}$$

$$x + y \leq 10 \rightarrow y \leq 10 - x$$

$$200x + 100y \leq 1200 \rightarrow y \leq -2x + 12$$

$$x + 2y \leq 12 \rightarrow y \leq -\frac{1}{2}x + 6$$

$$P = 500x + 300y$$



$(0, 6), (4, 4), (6, 0)$

$$P = 500(0) + 300(6) = 1800$$

$$P = 500(4) + 300(4) = 3200 \star$$

$$P = 500(6) + 300(0) = 3000$$

4 acres of wheat & 4 acres of rye.