

METHOD

1. Identify variables:

$x$ : # of 500 mL jars

$y$ : # of 400 mL jars

2. Translate inequalities:

$$x \geq 20$$

$$x \leq 40$$

$$y \geq 20$$

$$x + y \geq 50$$

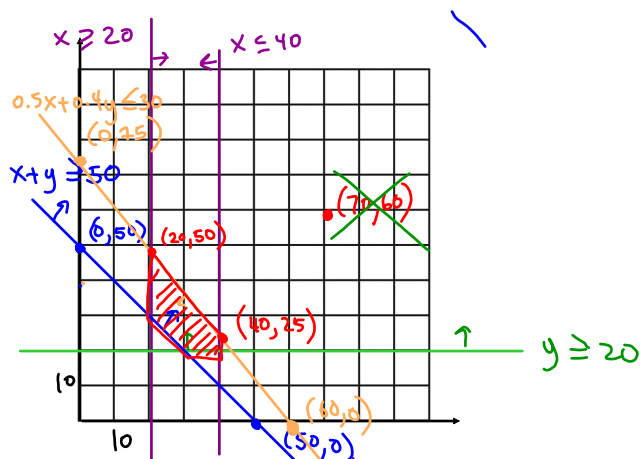
SYSTEM OF INEQUALITIES

$$0.5x + 0.4y \leq 30 \quad \text{or} \quad 500x + 400y \leq 30000$$

3. Graph inequalities

4. Find vertices

5. Test points



①  $x \geq 20$  start with  $x=20$  (vertical line)

$x \leq 40$

②  $y \geq 20$  (horizontal line)

③  $x+y \geq 50$

| x  | y  |
|----|----|
| 0  | 50 |
| 10 | 40 |
| 20 | 30 |
| ⋮  | ⋮  |

$x+y=50$

④  $0.5x+0.4y \leq 30$

| x  | y  |
|----|----|
| 0  | 75 |
| 60 | 0  |

$0.5x+0.4y = 30$

$0.5(0)+0.4y=30$

$$\frac{0.4y}{0.4} = \frac{30}{0.4}$$

$y=75$

$0.5x+0.4(0)=30$

$$\frac{0.5x}{0.5} = \frac{30}{0.5}$$

$x=60$