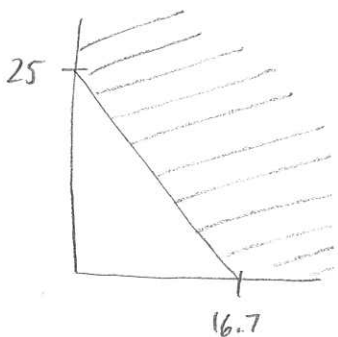


a) Let x be the number of units of Plan A purchased.
Let y be the number of units of Plan B purchased.

Constraints: $x \geq 0, y \geq 0$ $10,000x + 15,000y \geq 300,000$
 $180,000x + 120,000y \geq 3,000,000$ (or $10x + 15y \geq 300$)

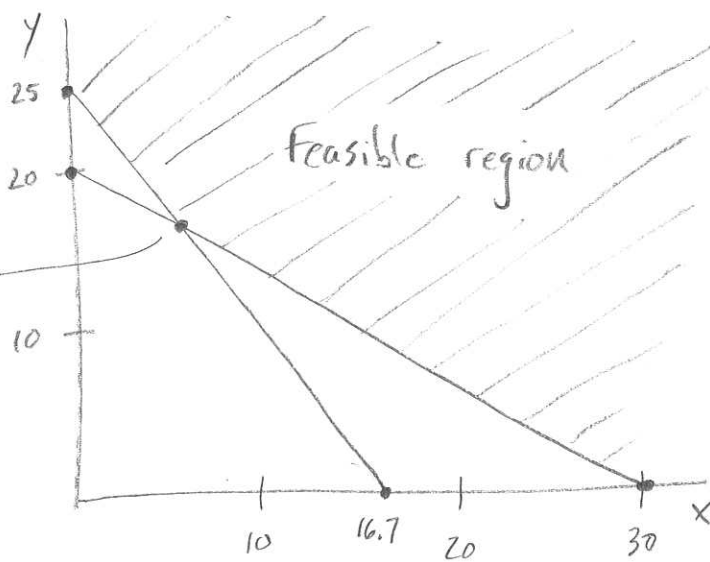
(or $18x + 12y \geq 300$) ← Note that these are equivalent to $3x + 2y \geq 50$ and $2x + 3y \geq 60$



Note which side is shaded!

x	y
0	25
16.7	0

x	y
0	20
30	0



$$\begin{aligned} 3x + 2y = 50 &\implies 9x + 6y = 150 \\ 2x + 3y = 60 &\implies -4x - 6y = -120 \\ \hline &5x = 30 \end{aligned}$$

$$\begin{aligned} 3(6) + 2y = 50 &\implies x = 6 \\ 18 + 2y = 50 \\ 2y = 32 &\implies (6, 16) \\ y = 16 \end{aligned}$$

The total cost of premiums is

$$C = 50x + 40y$$

point	cost
(0, 25)	1000
(6, 16)	940
(30, 0)	1500

b) $C = 25x + 40y$

point	cost
(0, 25)	1000
(6, 16)	790
(30, 0)	750

The minimum cost is \$750 when 30 units of Policy A and no units of Policy B are purchased.

The minimum cost is \$940 when 6 units of Policy A and 16 units of Policy B are purchased.