

HW #43 (6-4)

Example 5 (p. 324) (6-4)

$$\text{Maximize } P = 6x_1 + 12x_2 + 2x_3 + 8x_4$$

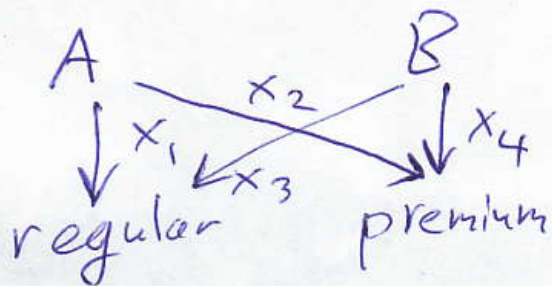
$$\text{subject to: } x_1 + x_2 \leq 30,000;$$

$$x_3 + x_4 \leq 20,000; \quad x_1 + x_3 \geq 20,000;$$

$$x_2 + x_4 \geq 10,000;$$

$$5x_1 - 15x_3 \leq 0;$$

$$15x_2 - 5x_4 \leq 0$$



$$\begin{array}{rcl}
 x_1 + x_2 & + s_1 & = 30,000 \\
 x_3 + x_4 & + s_2 & = 20,000 \\
 x_1 & + x_3 & - s_3 + a_3 = 20,000 \\
 x_2 & + x_4 & - s_4 + a_4 = 10,000 \\
 5x_1 & - 15x_3 & + s_5 = 0 \\
 15x_2 & - 5x_4 & + s_6 = 0 \\
 -6x_1 & - 12x_2 & - 2x_3 - 8x_4 + Ma_3 + Ma_4 + P = 0
 \end{array}$$

compare to p. 326