

:( 04)\_\_\_\_\_

$$\begin{aligned}(\text{Min}) Z &= 45x_1 + 70x_2 + 50x_3 \\ 5x_1 + 4x_2 + 3x_3 &\leq 82 \\ x_1 + x_2 + 2x_3 &\leq 23 \\ 2x_1 + 3x_2 + 5x_3 &\leq 55 \\ x_1 \geq 0 \quad x_2 \geq 0 \quad x_3 &\geq 0\end{aligned}$$

(Standard)

:( 06)\_\_\_\_\_

$$\left( \begin{array}{l} (\text{Min}) Z = X + 10Y \\ 12X + 15Y \leq 200 \\ 6X + 4Y \leq 25 \\ Y \leq 10 \\ X \geq 0, Y \geq 0 \end{array} \right)$$

$$\left( \begin{array}{l} (\text{Max}) Z = 120 Y_1 + 230 Y_2 \\ 5Y_1 + 4Y_2 + 3Y_3 \leq 160 \\ 2Y_1 + Y_2 = 89 \\ 4Y_2 + 5Y_3 \geq 62 \\ Y_1 \geq 0, Y_2 \geq 0, Y_3 \geq 0 \end{array} \right)$$

$$\left( \begin{array}{l} (\text{Min}) Z = 3X_1 + 5X_2 \\ 3X_1 + 2X_2 \geq 6 \\ X_1 \leq 5 \\ X_2 \geq 1 \\ X_1 \geq 0, X_2 \geq 0 \end{array} \right)$$

:( 04)\_\_\_\_\_

$$\left( \begin{array}{l} (\text{Min}) Z_1 = 180X_1 + 200X_2 + 150X_3 \\ X_1 + 3X_2 + 2X_3 \geq 30 \\ 3X_1 + 2X_2 + X_3 \geq 20 \\ 2X_1 + 5X_2 + 3X_3 \geq 75 \\ X_1 \geq 0 \quad X_2 \geq 0 \quad X_3 \geq 0 \end{array} \right)$$

$$\left( \begin{array}{l} (\text{Max}) Z_1 = 20X_1 + 30X_2 + 75X_3 \\ 6X_1 + 5X_2 + 4X_3 \leq 180 \\ 2X_2 + 3X_3 \leq 200 \\ 2X_1 + 3X_3 \leq 150 \\ X_1 \geq 0 \quad X_2 \geq 0 \quad X_3 \geq 0 \end{array} \right)$$

:( 06)\_\_\_\_\_

2500 2000 1500