

Production Planning

$$\begin{cases} \min \sum_p A_p x_p + B_p y_p \\ \sum_p c_{pr} x_p \leq C_r \quad \forall r \\ x_p + y_p \geq D_p \quad \forall p \\ x_p, y_p \geq 0 \end{cases}$$

Set Covering

$$\begin{cases} \min \sum_j c_j x_j \\ \sum_{j \in W_t} x_j \geq 1 \quad \forall t \\ x_j \in \{0, 1\} \end{cases}$$

Warehouse Location

$$\left\{ \begin{array}{l} \min \sum_w F y_w + \sum_{sw} c_{sw} x_{sw} \\ \sum_w x_{sw} = 1 \quad \forall s \\ x_{sw} \leq y_w \quad \forall s \forall w \\ \sum_s x_{sw} \leq C_w \quad \forall w \\ x_{sw} \in \{0, 1\} \quad y_w \in \{0, 1\} \end{array} \right.$$