

General Duality Scheme

(P)

$\max \mathbf{c}^t \mathbf{x}$ *subject to*

$$\begin{matrix} \text{I} & \text{RF} \\ \text{E} \end{matrix} \mathbf{A} \mathbf{x} \leq \mathbf{b}$$

$$\begin{matrix} \mathbf{x}_R \geq \mathbf{0}, \\ \mathbf{x}_F \text{ unrestricted} \end{matrix}$$

(D)

$\min \mathbf{b}^t \mathbf{y}$ *subject to*

$$\begin{matrix} \text{IE} \\ \text{R} \\ \text{F} \end{matrix} \mathbf{A}^t \mathbf{y} \geq \mathbf{c}$$

$$\begin{matrix} \mathbf{y}_I \geq \mathbf{0}, \\ \mathbf{y}_E \text{ unrestricted} \end{matrix}$$