

## Standard LP Forms

*Standard Equality Form:* this form is particularly useful for developing the Simplex Algorithm:

$$\begin{array}{ll} \min & z = \mathbf{c}^T \mathbf{x} \\ \text{s.t.} & A\mathbf{x} = \mathbf{b} \\ & \mathbf{x} \geq \mathbf{0} \end{array}$$

*Standard Inequality Forms:* these forms are particularly useful for understanding the geometry of LP problems and will be useful in our later study of duality:

$$\begin{array}{ll} \min & z = \mathbf{c}^T \mathbf{x} \\ \text{s.t.} & A\mathbf{x} \geq \mathbf{b} \\ & \mathbf{x} \geq \mathbf{0} \end{array}$$

$$\begin{array}{ll} \max & z = \mathbf{c}^T \mathbf{x} \\ \text{s.t.} & A\mathbf{x} \leq \mathbf{b} \\ & \mathbf{x} \geq \mathbf{0} \end{array}$$