Standard LP Forms

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

\[
\begin{align*}
\min & \quad z = c^T x \\
\text{s.t.} & \quad Ax = b \\
& \quad x \geq 0
\end{align*}
\]

*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:

\[
\begin{align*}
\min & \quad z = c^T x \\
\text{s.t.} & \quad Ax \geq b \\
& \quad x \geq 0
\end{align*}
\]

\[
\begin{align*}
\max & \quad z = c^T x \\
\text{s.t.} & \quad Ax \leq b \\
& \quad x \geq 0
\end{align*}
\]