

Optimization in Computer Networks

Parham Alvani

November 4, 2017

1 NUM PROBLEM

$$\begin{array}{ll} \max_x & \sum_{i=1}^3 x_i \\ \text{s.t.} & \\ & x_1 \leq 20 \\ & x_1 + x_2 \leq 30 \\ & x_2 \leq 20 \\ & x_2 + x_3 \leq 30 \\ & x_3 \leq 25 \\ & x_2 \leq \log(x_1) \end{array} \tag{1.1}$$

1.1 STANDARD FORM

$$\begin{array}{ll}\max_x & \sum_{i=1}^3 x_i \\ \text{s.t.} & x_1 - 20 \leq 0 \\ & x_1 + x_2 - 30 \leq 0 \\ & x_2 - 20 \leq 0 \\ & x_2 + x_3 - 30 \leq 0 \\ & x_3 - 25 \leq 0 \\ & x_2 - \log(x_1) \leq 0\end{array}\tag{1.2}$$

1.1.1 BARRIERS