

The background of the slide is a faded image of the Jiaotong University gate. The gate is a large, white, curved structure with the university's name in English, "JIAOTONG UNIVERSITY", on the right side and in Chinese, "交通大学", on the left side. The gate is flanked by trees and a building with a red roof. A large, dark purple rectangular box is superimposed over the center of the image, containing the title "作业2" in yellow text.

作业2

2021-2022学年第2学期

作业2

1. 用图解法分析以下LP问题的最优解：

$$\begin{aligned} \min \quad & x_1 + \beta x_2 \\ \text{s.t.} \quad & -3x_1 + 4x_2 \leq 12, \\ & 2x_1 + x_2 \leq 6, \\ & x_1 \geq 0, x_2 \geq 0. \end{aligned}$$

其中 β 为某参数, 并求该LP问题的所有基本可行解。

2. 用单纯形法求以下线性规划问题的最优解：

$$\begin{aligned} \min \quad & 3x_1 - 2x_2 + x_3 \\ \text{s.t.} \quad & 2x_1 + 2x_2 - x_3 \leq 2 \\ & -3x_1 - x_2 + 2x_3 \leq -2 \\ & x_1 \geq 0, x_2 \geq 0, x_3 \geq 0. \end{aligned}$$