

# Linear algebra, WNE, 2018/2019 meeting 25.

17 January 2019

## Problems

1. Using simplex method solve the following linear programming problems

- $2x_1 - x_2 \rightarrow \max$ , with constraints:  
 $4x_1 + 4x_2 \leq 12$ ,  
 $x_1 \leq 2, x_2 \leq 2$ ,  
 $x_1 \geq 0, x_2 \geq 0$ .
- $3x - 2y \rightarrow \max$ , with constraints  
 $-3x + 2y \geq 8$ ,  
 $x - y \leq 0$ ,  
 $x \geq 0, y \geq 0$ .
- $8x + u \rightarrow \max$ , with constraints:  
 $2x + 4y + 8u = 10$ ,  
 $3y + z - u = 3$ ,  
 $t + 6u = 12$ ,  
 $x, y, z, t, u \geq 0$ .

## Homework

1. Solve the following linear programming problems using simplex method

- $4a + 3b - 4c \rightarrow \max$ , with constraints:  
 $2a + b - 2c \leq 18$ ,  
 $a + b - c \leq 13$ ,  
 $a - 2c \leq 13$ ,  
 $a, b, c \geq 0$ .
- $4a + 3b + e \rightarrow \min$ , with constraints  
 $3a - \frac{1}{2}b + d - 3e = 3$ ,  
 $-4a - 2b - \frac{2}{3}c + 2d = 7$ ,  
 $a, b, c, d, e \geq 0$ .