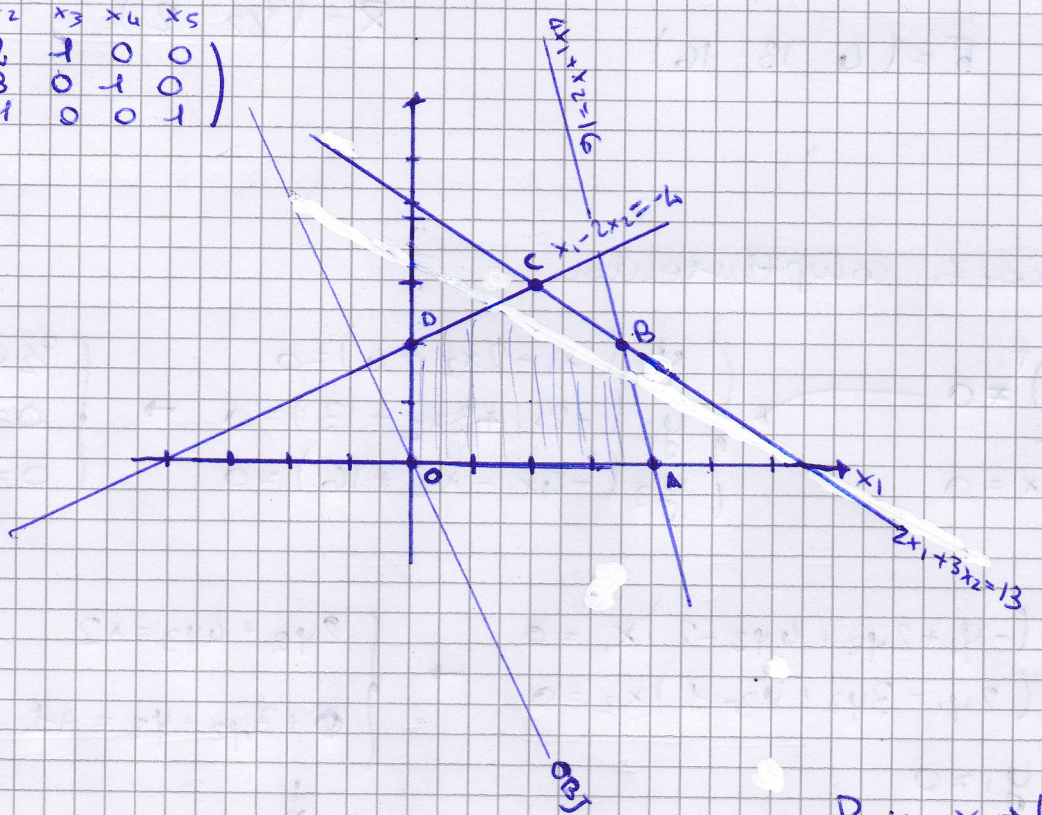
• Basi ammissibili a vertici, duale, scarti complementari

$$\max\ 2x_1 + x_2$$
$$x_1 - 2x_2 \geq -4$$
$$2x_1 + 3x_2 \leq 13$$
$$4x_1 + x_2 \leq 16$$
$$x_1, x_2 \geq 0$$

$\xrightarrow{FS}$

$$\max\ 2x_1 + x_2$$
$$-x_1 + 2x_2 + x_3 = 4$$
$$2x_1 + 3x_2 + x_4 = 13$$
$$4x_1 + x_2 + x_5 = 16$$
$$x_i \geq 0 \quad i = 1, \dots, 5$$

$$A = \begin{array}{c} \begin{matrix} x_1 & x_2 & x_3 & x_4 & x_5 \end{matrix} \\ \begin{pmatrix} -1 & 2 & 1 & 0 & 0 \\ 2 & 3 & 0 & 1 & 0 \\ 4 & 1 & 0 & 0 & 1 \end{pmatrix} \end{array}$$



B $\max \to f.o. = 9$

$$O = (0\ 0) \to \begin{cases} x_3 = 4 \\ x_4 = 13 \\ x_5 = 16 \end{cases} \to B_O = \begin{array}{c} \begin{matrix} x_3 & x_4 & x_5 \end{matrix} \\ \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix} \end{array}$$

$$A = (4\ 0) \to \begin{cases} x_3 = 8 \\ x_4 = 5 \\ x_5 = 0 \end{cases} \to B_A = \begin{array}{c} \begin{matrix} x_1 & x_3 & x_4 \end{matrix} \\ \begin{pmatrix} -1 & 1 & 0 \\ 2 & 0 & 1 \\ 4 & 0 & 0 \end{pmatrix} \end{array}$$

$$B = (\tfrac{7}{2}\ 2) \to \begin{cases} x_3 = \tfrac{7}{2} \\ x_4 = 0 \\ x_5 = 0 \end{cases} \to B_B = \begin{array}{c} \begin{matrix} x_1 & x_2 & x_3 \end{matrix} \\ \begin{pmatrix} -1 & 2 & 1 \\ 2 & 3 & 0 \\ 4 & 1 & 0 \end{pmatrix} \end{array}$$

$$C = (2\ 3) \to \begin{cases} x_3 = 0 \\ x_4 = 0 \\ x_5 = 5 \end{cases} \to B_C = \begin{array}{c} \begin{matrix} x_1 & x_2 & x_5 \end{matrix} \\ \begin{pmatrix} -1 & 2 & 0 \\ 2 & 3 & 0 \\ 4 & 1 & 1 \end{pmatrix} \end{array}$$

$$D = (0\ 2) \to \begin{cases} x_3 = 0 \\ x_4 = 7 \\ x_5 = 14 \end{cases} \to B_D = \begin{array}{c} \begin{matrix} x_2 & x_4 & x_5 \end{matrix} \\ \begin{pmatrix} 2 & 0 & 0 \\ 3 & 1 & 0 \\ 1 & 0 & 1 \end{pmatrix} \end{array}$$