

Subject § 1.3. #13

For a). set $x_5 = t, x_4 = s, x_2 = r, \Rightarrow \begin{cases} x_3 = 5 - 2s - 4t \\ x_1 = -2 - t - 3s - 2r \end{cases}$

For b). Let A_1, A_2, A_3, A_4, A_5 be the columns of A .

$$\begin{aligned} \text{then } b &= x_1 A_1 + x_2 A_2 + x_3 A_3 + x_4 A_4 + x_5 A_5 \\ &= x_1 A_1 + r A_2 + x_3 A_3 + s A_4 + t A_5. \end{aligned}$$

set $r = s = t = 0 \Rightarrow x_1 = -2, x_3 = 5$, when A_1 and A_3 are given

$$\Rightarrow b = -2A_1 + 5A_3.$$