The simplex algorithm execution

Simplex Algorithm

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Let's study the following dictionnary

$$(D_0): \quad \begin{cases} x_3 &= + \ 4 \ - \ x_1 \ + \ x_2 \\ \hline z &= \qquad\quad + \ x_1 \ + \ x_2 \end{cases}$$

x_1 enters, x_3 leaves.
After this step, we get the new dictionnary :

$$(D_1): \quad \begin{cases} x_1 &= + \ 4 \ + \ x_2 \ - \ x_3 \\ \hline z &= + \ 4 \ + \ 2x_2 \ - \ x_3 \end{cases}$$

x_2 enters, but we don't have any bound on it given by the dictionnary. So the domain is unbounded.