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How will you solve $\bar{A} \bar{x} = \bar{O}$.

$$\bar{A}_{n \times c} \bar{x}_{c \times 1} = \bar{O}_{n \times 1}$$

Here, n : no. of elements
 c : no. of chemical compounds

The above situation can be treated as solution to a set of ^{"n"} linear equations in c variables.

And therefore Gauss-Jordan method or matrix inversion amongst others may be used.

The case in which we get non-trivial solutions is required.

\Rightarrow The chemical eq. can't be balanced when $\text{rank}(A) = n$ as that would just give $\bar{x} = \bar{O}$, which is a undesirable ~~pro~~ solution.

\rightarrow numpy.linalg.solve ($\bar{A}_{n \times c}$, \bar{O}) may be used to obtain the solution.

\rightarrow Usually, these equations will have infinite solutions as factors a solution into a const. is also a solution. So any one \bar{x} out of all these may be a valid answer.