Solutions to linear systems

1. Consider the system

\[
\begin{align*}
x + y + 2z &= 0 \\
2x + y + cz &= 0 \\
3x + y + 6z &= 0.
\end{align*}
\]

a) Take \(c = 1\) and find all the solutions.
b) Take \(c = 4\) and find all the solutions.