Question 27

We are row reducing the augmented matrix:

$$
\left[
\begin{array}{ccc|c}
1 & 1 & 1 & -1 \\
2 & 3 & 2 & 3 \\
2 & 1 & 2 & -7
\end{array}
\right]
$$

$$
\xrightarrow{R_2:=R_2-\frac{2}{1}\times R_1}
\left[
\begin{array}{ccc|c}
1 & 1 & 1 & -1 \\
0 & 1 & 0 & 5 \\
2 & 1 & 2 & -7
\end{array}
\right]
$$

$$
\xrightarrow{R_3:=R_3-\frac{2}{1}\times R_1}
\left[
\begin{array}{ccc|c}
1 & 1 & 1 & -1 \\
0 & 1 & 0 & 5 \\
0 & -1 & 0 & -5
\end{array}
\right]
$$

$$
\xrightarrow{R_1:=R_1-\frac{1}{1}\times R_2}
\left[
\begin{array}{ccc|c}
1 & 0 & 1 & -6 \\
0 & 1 & 0 & 5 \\
0 & -1 & 0 & -5
\end{array}
\right]
$$

$$
\xrightarrow{R_3:=R_3-\frac{-1}{1}\times R_2}
\left[
\begin{array}{ccc|c}
1 & 0 & 1 & -6 \\
0 & 1 & 0 & 5 \\
0 & 0 & 0 & 0
\end{array}
\right]
$$