Resolver el sistema:

$$
\begin{array}{rrrrrrrrrr}
2x & + & y & - & 2z & + & 3w & = & 1 \\
3x & + & 2y & - & z & + & 2w & = & 4 \\
3x & + & 3y & + & 3z & - & 3w & = & 5
\end{array}
$$

$$
\begin{array}{rrrrrrrrrr}
2x & + & y & - & 2z & + & 3w & = & 1 \\
3x & + & 2y & - & z & + & 2w & = & 4 \\
3x & + & 3y & + & 3z & - & 3w & = & 5
\end{array}
\Leftrightarrow
\begin{pmatrix}
2 & 1 & -2 & 3 & 1 \\
3 & 2 & -1 & 2 & 4 \\
3 & 3 & 3 & -3 & 5
\end{pmatrix}
$$

$$
\underset{\substack{F_2 \to 2F_2 - 3F_1 \\ F_3 \to 2F_3 - 3F_1}}{\to}
\begin{pmatrix}
2 & 1 & -2 & 3 & 1 \\
0 & 1 & 4 & -5 & 5 \\
0 & 3 & 12 & -15 & 7
\end{pmatrix}
\underset{F_3 \to F_3 - 3F_2}{\to}
\begin{pmatrix}
2 & 1 & -2 & 3 & 1 \\
0 & 1 & 4 & -5 & 5 \\
0 & 0 & 0 & 0 & -1
\end{pmatrix}
$$

$$
\Leftrightarrow
\begin{cases}
2x & + & y & - & 2z & + & 3w & = & 1 \\
& & y & + & 4z & - & 5w & = & 5 \quad \Rightarrow \textit{no hay solución} \\
& & & & & & 0 & = & -1
\end{cases}
$$