4. Augmented matrix $= \begin{bmatrix} 1 & 3 & -2 & 4 & 0 \\ 2 & -6 & 1 & -2 & -3 \\ 1 & -3 & 4 & -8 & 20 \end{bmatrix}$

$R_1 \rightarrow 2R_1$
$R_2 \rightarrow R_2 + R_1$
$R_3 \rightarrow 2R_3$

$\begin{bmatrix} -2 & 6 & -4 & 8 & 0 \\ 0 & 0 & -3 & 6 & -3 \\ 2 & -6 & 8 & -16 & 40 \end{bmatrix}$

$R_3 \rightarrow R_3 + R_1$

$\begin{bmatrix} -2 & 6 & -4 & 8 & 0 \\ 0 & 0 & -3 & 6 & -3 \\ 0 & 0 & 4 & -8 & 40 \end{bmatrix}$

$R_2 \rightarrow 4R_2$
$R_3 \rightarrow 3R_3$

$\begin{bmatrix} -2 & 6 & -4 & 8 & 0 \\ 0 & 0 & -12 & 24 & -12 \\ 0 & 0 & 12 & -24 & 120 \end{bmatrix}$

$R_3 \rightarrow R_3 + R_2$

$\begin{bmatrix} -2 & 6 & -4 & 8 & 0 \\ 0 & 0 & -12 & 24 & -12 \\ 0 & 0 & 0 & 0 & 108 \end{bmatrix}$

Thus, we have the augmented matrix in row echelon form (Gaussian Elimination).

However, converting the last row to a linear equation, we get $0 = 108$, which is absurd.

Therefore the ~~sys~~ given system of equations is inconsistent; there is no solution.