

$$\begin{aligned}
 & \textcircled{1} \begin{vmatrix} 1 & 2 & -1 \\ 2 & 0 & 0 \\ 3 & 0 & 4 \end{vmatrix} = \begin{aligned} & \textcircled{1} (1)(0)(0) + \textcircled{2} (2)(2)(4) + \textcircled{3} (3)(0)(-1) \\ & + \textcircled{4} (3)(0)(2) + \textcircled{5} (0)(2)(-1) + (4)(0)(1) \end{aligned} \\
 & = \boxed{-16}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{2} \textcircled{6} \begin{vmatrix} 1 & 2 & -1 \\ 2 & 0 & 0 \\ 3 & 0 & 4 \end{vmatrix} & \rightarrow = -2 \begin{vmatrix} 2 & -1 \\ 0 & 4 \end{vmatrix} + 0 \dots - 0 \dots \\
 & = -2(8) = \boxed{-16}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{3} \textcircled{7} \begin{vmatrix} 1 & 2 & -1 \\ 2 & 0 & 0 \\ 3 & 0 & 4 \end{vmatrix} & = -2 \begin{vmatrix} 2 & 0 \\ 3 & 4 \end{vmatrix} + 0 \dots - 0 \dots \\
 & = -2(8) = \boxed{-16}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{4} \textcircled{8} \begin{vmatrix} 1 & 2 & -1 \\ 2 & 0 & 0 \\ 3 & 0 & 4 \end{vmatrix} & = - \begin{vmatrix} 2 & 1 & -1 \\ 0 & 2 & 0 \\ 0 & 3 & 4 \end{vmatrix} = \begin{vmatrix} 2 & 1 & -1 \\ 0 & 3 & 4 \\ 0 & 2 & 0 \end{vmatrix} \\
 & = 3 \begin{vmatrix} 2 & 1 & -1 \\ 0 & 1 & 4/3 \\ 0 & 2 & 0 \end{vmatrix} = 3 \begin{vmatrix} 2 & 1 & -1 \\ 0 & 1 & 4/3 \\ 0 & 0 & -8/3 \end{vmatrix} = 3(2)(1)(-8/3) \\
 & = \boxed{-16}
 \end{aligned}$$

$$\begin{aligned}
 \textcircled{5} x_1 = \frac{\begin{vmatrix} 1 & 2 & -1 \\ 0 & 0 & 0 \\ 0 & 0 & 4 \end{vmatrix}}{-16} = 0; \quad x_2 = \frac{\begin{vmatrix} 1 & 1 & -1 \\ 2 & 0 & 0 \\ 3 & 0 & 4 \end{vmatrix}}{-16} = - \frac{\begin{vmatrix} 2 & 0 \\ 3 & 4 \end{vmatrix}}{-16} = \boxed{\frac{1}{2}}
 \end{aligned}$$

$$x_3 = \frac{\begin{vmatrix} 1 & 2 & 1 \\ 2 & 0 & 0 \\ 3 & 0 & 0 \end{vmatrix}}{-16} = 0 \quad \boxed{\therefore (0, \frac{1}{2}, 0)^T = x}$$