1.

$2x - y + 2z = 2.$
$x - 2y + z = -4$
$x + y + dz = 4.$

then the value of d such that the given system of equations has no solution, is

(a) 3   (b) 1   (c) 0   (d) -3

Sol⁰

given System has no solutions.

$$\theta = \begin{bmatrix} 2 & -1 & 2 \\ 1 & -2 & 1 \\ 1 & 1 & d \end{bmatrix} \qquad \Rightarrow |A| = 0$$

$|A| = 0$ and any $|A_1|, |A_2|, |A_3|$ is non-zero.

let $\begin{vmatrix} 2 & -1 & 2 \\ 1 & -2 & 1 \\ 1 & 1 & d \end{vmatrix} = 0$ and $|A_3| = \begin{vmatrix} 2 & -1 & 2 \\ 1 & -2 & -4 \\ 1 & 1 & 4 \end{vmatrix} = 6 \neq 0$

$\Rightarrow 2(-2d - 1) + 1(d - 1) + 2(1 + 2) = 0$

$-4d - 2 + d - 1 + 6 = 0$

$-3d = -3$

$$\boxed{d = 1}$$