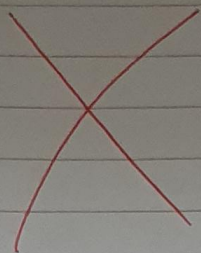


Adam Evans 200595911/12/20

6)



$$c) \begin{pmatrix} 3 & 1 & 4 \\ 5 & 3 & 1 \\ 2 & 4 & 3 \end{pmatrix} \begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} 21 \\ 15 \\ 10 \end{pmatrix}$$

$$\begin{aligned} \text{Find } |A| &= 3(3 \times 3 - 4 \times 1) - 1(5 \times 3 - 2 \times 1) + 4(5 \times 4 - 2 \times 3) \\ &= 9 - 4 \quad 15 - 2 \quad 20 - 6 \\ &= 3(5) - 1(13) + 4(14) \\ &= 15 - 13 + 56 \end{aligned}$$

$$|A| = 58$$

$$|A_1| = \begin{vmatrix} 21 & 1 & 4 \\ 15 & 3 & 1 \\ 10 & 4 & 3 \end{vmatrix} \quad |A_1| = 21(3 \times 3 - 4 \times 1) - 1(15 \times 3 - 10 \times 1) + 4(15 \times 4 - 10 \times 1)$$

$$= 21(5) - 1(35) + 4(50)$$

$$= 105 - 35 + 200$$