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$$\vec{a} = (1, 2, -3)$$

$$\vec{b} = (-3, 4, 1)$$

$$\vec{c} \perp \vec{a}, \vec{c} \perp \vec{b}, \vec{c} \neq \vec{0} \quad ?$$

$$\vec{b} = (-3, 4, 1)$$

1<sup>o</sup> suposio  $\vec{c} = (x, y, z)$

$$\begin{cases} \vec{a} \cdot \vec{c} = 0 \\ \vec{b} \cdot \vec{c} = 0 \end{cases} \Leftrightarrow$$

$$\begin{cases} (1, 2, -3) \cdot (x, y, z) = 0 \\ (-3, 4, 1) \cdot (x, y, z) = 0 \end{cases}$$

$$\begin{cases} (1, 2, -3) \cdot (x, y, z) = 0 \\ (-3, 4, 1) \cdot (x, y, z) = 0 \end{cases}$$

$$\begin{cases} x + 2y - 3z = 0 \\ -3x + 4y + z = 0 \end{cases} \quad | -2r_1$$

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$$\begin{cases} x + 2y - 3z = 0 \\ -5x + 7z = 0 \end{cases}$$

$$7z = 5x$$

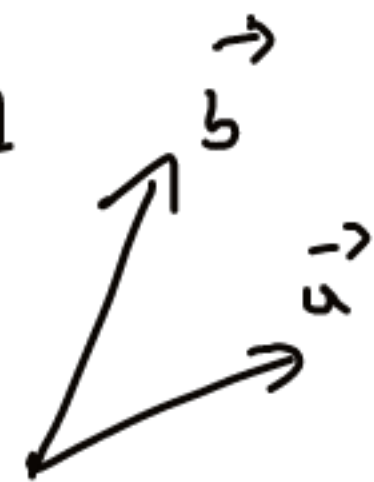
$$z = \frac{5}{7}x$$

$$x + 2y - \frac{15}{7}x = 0$$

$$2y = \frac{15}{7}x - x = \frac{8}{7}x$$

$$y = \frac{4}{7}x$$

n.p.  $\vec{c} = \left(1, \frac{4}{7}, \frac{5}{7}\right)$



2<sup>o</sup> suposio

$$\vec{c} = \vec{a} \times \vec{b} = \begin{pmatrix} |2 & -3| & -|1 & -3| & |1 & 2| \\ |4 & 1| & -|-3 & 1| & |-3 & 4| \end{pmatrix}$$

$$= (2 - (-12), -(1 - 9), 4 + 6) =$$

$$= \underline{\underline{(14, 8, 10)}}$$

$$\begin{vmatrix} a & b \\ c & d \end{vmatrix} = ad - bc$$

spr.  
 $(14, 8, 10) \cdot (1, 2, -3) =$   
 $= 14 + 16 - 30 = 0$

$(14, 8, 10) \cdot (-3, 4, 1) =$   
 $= -42 + 32 + 10 = 0$