

S. 136/3

$$a) \vec{x} = \begin{pmatrix} 1 \\ 2 \\ 0 \end{pmatrix} + r \begin{pmatrix} 1 \\ 0 \\ 1 \end{pmatrix} + s \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$$

Var 1 I  $x = 1 + r + s$

II  $y = 2 + 2s \rightarrow s = \frac{1}{2}y - 1$

III  $z = r + 3s \rightarrow z = r + \frac{3}{2}y - 3 \wedge r = z - \frac{3}{2}y + 3$  } in I

$$\wedge x = 1 + z - \frac{3}{2}y + 3 + \frac{1}{2}y - 1$$

$$x = 3 + z - y$$

$$\wedge \underline{x + y - z = 3}$$

Var 2

$$\begin{vmatrix} 1 & 1 & x-1 \\ 0 & 2 & y-2 \\ 1 & 3 & z-0 \end{vmatrix} = 0$$

$$+1 \cdot \begin{vmatrix} 2 & y-2 \\ 3 & z \end{vmatrix} + 1 \cdot \begin{vmatrix} 1 & x-1 \\ 2 & y-2 \end{vmatrix} = 0$$

$$2z - 3(y-2) + (y-2) - 2(x-1) = 0$$

$$2z - 3y + 6 + y - 2 - 2x + 2 = 0$$

$$-2x - 2y + 2z = -6 \quad | :(-2)$$

$$\underline{x + y - z = 3}$$

b)  $6x - 3y - 2z = -5$

c)  $y = 5$

d)  $2x - y - z = -2$

S. 137/8

$$a) \vec{x} = \begin{pmatrix} 0 \\ 2 \\ -1 \end{pmatrix} + r \begin{pmatrix} 6 \\ -7 \\ 1 \end{pmatrix} + s \begin{pmatrix} -1 \\ -2 \\ 2 \end{pmatrix}$$

CP:  $\det \begin{pmatrix} 6 & 1 & x \\ -7 & -2 & y-2 \\ 1 & 2 & z+1 \end{pmatrix} = 0 \wedge \underline{12x + 11y + 5z = 17}$

b)  $7x + 15y + 9z = 70$