No.

DATE.

40823117L 資工系113級 方圓丞

10. Write v as a linear combination of u_1, u_2 and u_3, if possible

$v=(4,4,5)$, $u_1=(1,2,3)$, $u_2=(-2,0,1)$, $u_3=(1,0,0)$

$c_1u_1 + c_2u_2 + c_3u_3 = v$

$c_1 - 2c_2 + c_3 = 4$. $\quad 2+2+c_3=4$, $c_3=0$

$2c_1 - 0 + 0 = 4 \quad c_1=2$

$3c_1 + c_2 + 0 = 5 \quad c_2=-1$

~~$v=2u_2$~~ $\quad v=2u_1-u_2$ #

13. Determine the zero vector and the additive inverse of a vector in the vector space. $M_{3,4}$

zero vector $= \begin{bmatrix} 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$ #

The additive inverse of v in vector space

$$v=\begin{bmatrix} a_{11} & a_{12} & a_{13} & a_{14} \\ a_{21} & a_{22} & a_{23} & a_{24} \\ a_{31} & a_{32} & a_{33} & a_{34} \end{bmatrix} \Rightarrow \begin{bmatrix} -a_{11} & -a_{12} & -a_{13} & -a_{14} \\ -a_{21} & -a_{22} & -a_{23} & -a_{24} \\ -a_{31} & -a_{32} & -a_{33} & -a_{34} \end{bmatrix}$$ #