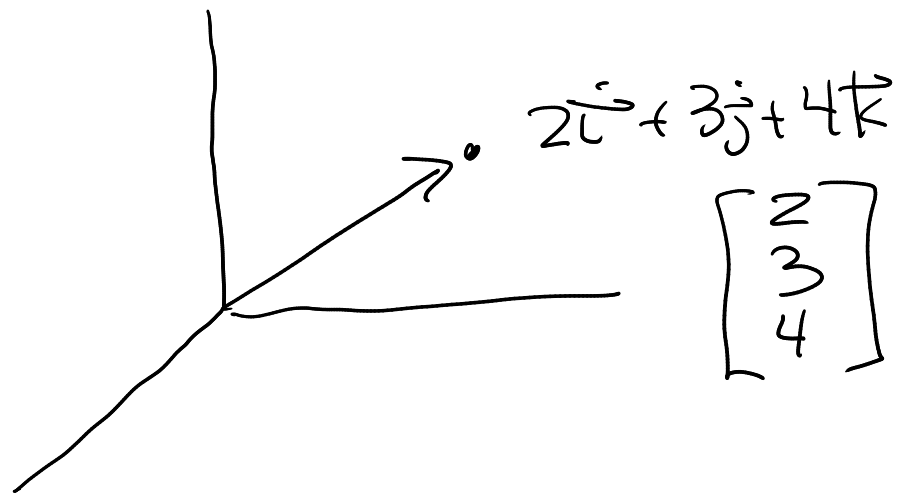


Math 290 Thursday, February 4

Section 10

$$\vec{v} = \begin{bmatrix} 3 \\ 4 \\ -2 \\ 8 \end{bmatrix}$$



Fri - LC

Mon - SS

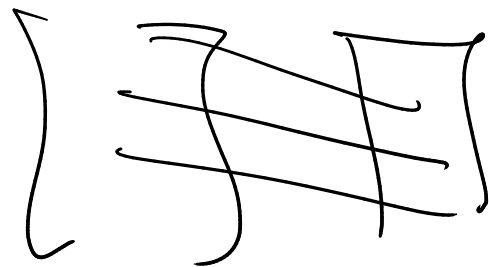
Tue - Problems

Homt SE-2

Actually row-reduce

Ex

$$\begin{bmatrix} 2 & 7 & 5 \\ -3 & 7 & -1 \\ 4 & 4 & 3 \\ -1 & 2 & 2 \\ 6 & 4 & 4 \end{bmatrix} = \begin{bmatrix} 1 \\ 2 \\ 6 \\ 4 \\ 10 \end{bmatrix}$$



$$\begin{bmatrix} a & b \\ c & d \end{bmatrix}$$

Ex

$$\begin{bmatrix} 2 \\ 3 \\ 1 \end{bmatrix} = \begin{bmatrix} 2 \\ 3 \\ 1 \end{bmatrix}$$

Defn CVE  $\underline{u} \approx \underline{v}$  if  $[\underline{u}]_i = [\underline{v}]_i$  for  $1 \leq i \leq n$

Addition:  $[\underline{u} + \underline{v}]_i = [\underline{u}]_i + [\underline{v}]_i$

10 Properties

Theorem  $0 \underline{u} = \underline{0}$ ,  $\underline{u} \in \mathbb{Q}^n$

Proof

$$0 \underline{u} = \underline{0} + 0 \underline{u}$$

$$= \underline{-(0 \underline{u})} + \underline{0 \underline{u}} + 0 \underline{u}$$

$$= \underline{-(0 \underline{u})} + (0 \underline{u} + 0 \underline{u})$$

$$= \underline{-(0 \underline{u})} + (0+0) \underline{u}$$

$$\begin{aligned} &= \underline{-(0 \underline{u})} + 0 \underline{u} \\ &= \underline{0} \end{aligned}$$

DSAC

$$(\alpha + \beta) \underline{u} = \alpha \underline{u} + \beta \underline{u}$$