Akash

2) We have, in osthormal bacy

let i=3, orthornal basic are

$$C_{i} = \begin{cases} 1 \\ 0 \\ 0 \end{cases}$$

$$C_{3} = \begin{cases} 0 \\ 0 \\ 0 \end{cases}$$

lete represent some random voter in

R3 V= 2x+4y+32=0, in orthogral bays,

of following

$$2\left(\frac{1}{0}\right) + 4\left(\frac{0}{0}\right) + 3\left(\frac{0}{0}\right) = 0$$

i-e 2e, + 4e2 13e3=0

for this case constants are 2,483

in energy for n

0 8 [0, V, + a, V, + -- anvn = 0

3) a) 
$$A = \begin{cases} 0 & -1 \\ 2 & 3 \end{cases}$$

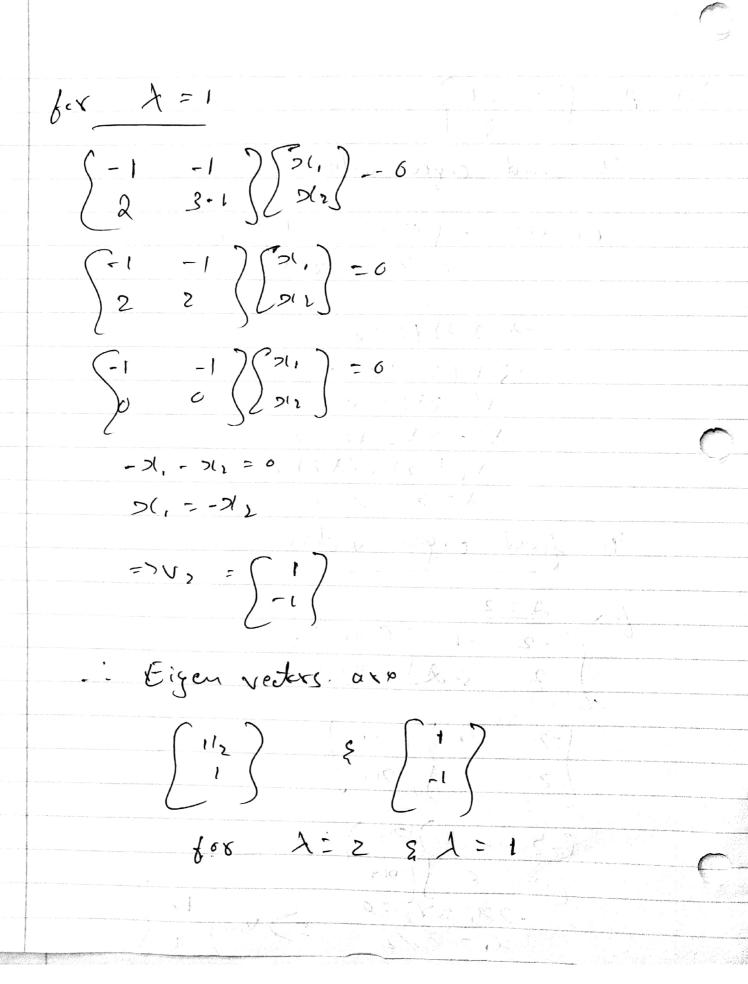
To find eigen value

 $1A - \lambda II = \begin{cases} 0 - A & -1 \\ 2 & 3 - \lambda \end{cases} = 0$ 
 $-\lambda (3-1) + 2 = 0$ 
 $-\lambda (3-1) + 2 = 0$ 
 $\lambda^2 - 3\lambda + 2 = 0$ 
 $\lambda^2 - 3\lambda + 2 = 0$ 
 $\lambda^2 - 2\lambda - \lambda + 2 = 0$ 
 $\lambda (\lambda - 1) - 1 (\lambda - 1) = 0$ 
 $\lambda = \lambda - \lambda - 1$ 

To find Eigen vectors

 $\begin{cases} -2 & -1 \\ 2 & 3 - \lambda \end{cases} = 0$ 
 $\begin{cases} -2 & -1 \\ 2 & 3 - \lambda \end{cases} = 0$ 
 $\begin{cases} -2 & -1 \\ 2 & 3 - \lambda \end{cases} = 0$ 
 $\begin{cases} -2 & -1 \\ 2 & 3 - \lambda \end{cases} = 0$ 

 $-271, = x_2 = 0$  $x_1 = x_2/2$  = 1/2



3b) Gigen values were some as read morally collected but not eigen eigen vertices because eigen vertices are noramalized (made unit length)