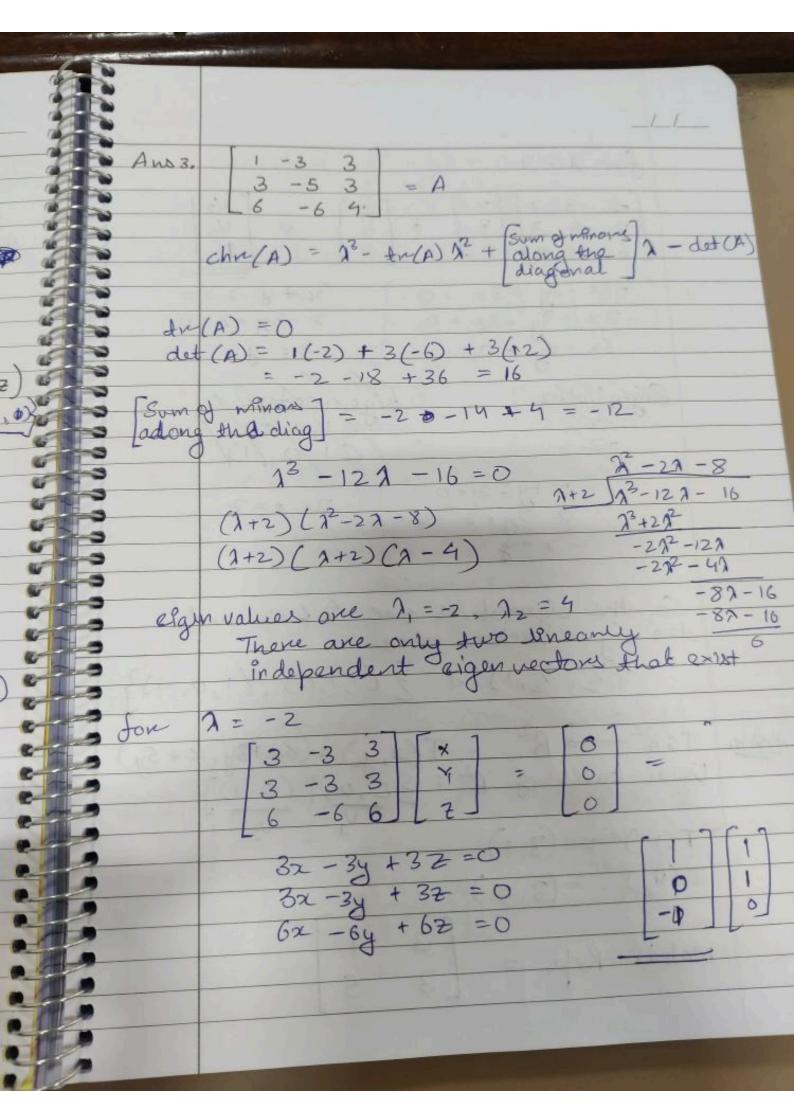


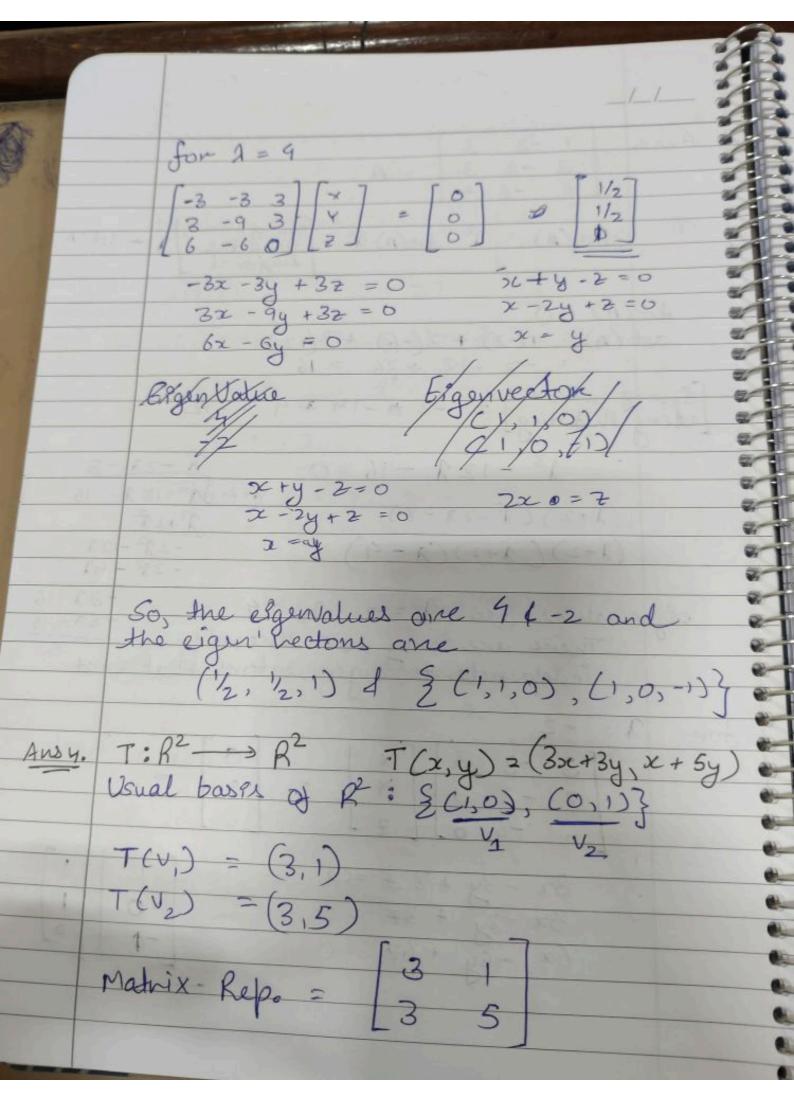
```
a(1,0) + b(0,1) = (2,3)
   a(1,0) + b(0,1) = (9,-5)
       (0,6) 3(2,3)
       (a,b) = (-9,-5)
   Matrex Representation = [2,3] = 100 of T(x,y)
    det (f) = -10 + 27 = 17
b) T: R^3 \to R^3 T(x, y, z) = (3x-2z, 5y+7z, x+7z)
   Usual basis for R^3 = \frac{5}{2}(1,0,0)(0,1,0)(0,0,0)

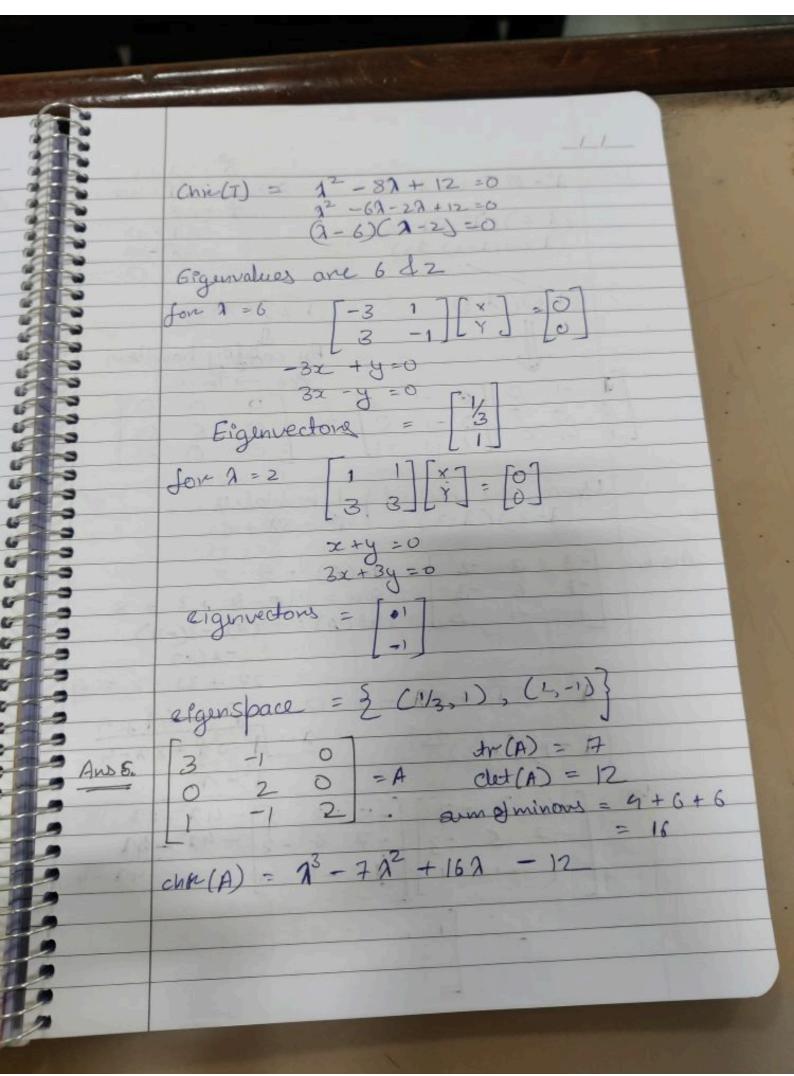
T(v_1) = (3,0,1) v_2 v_3
   T(V_2) = (0, 5, 1)

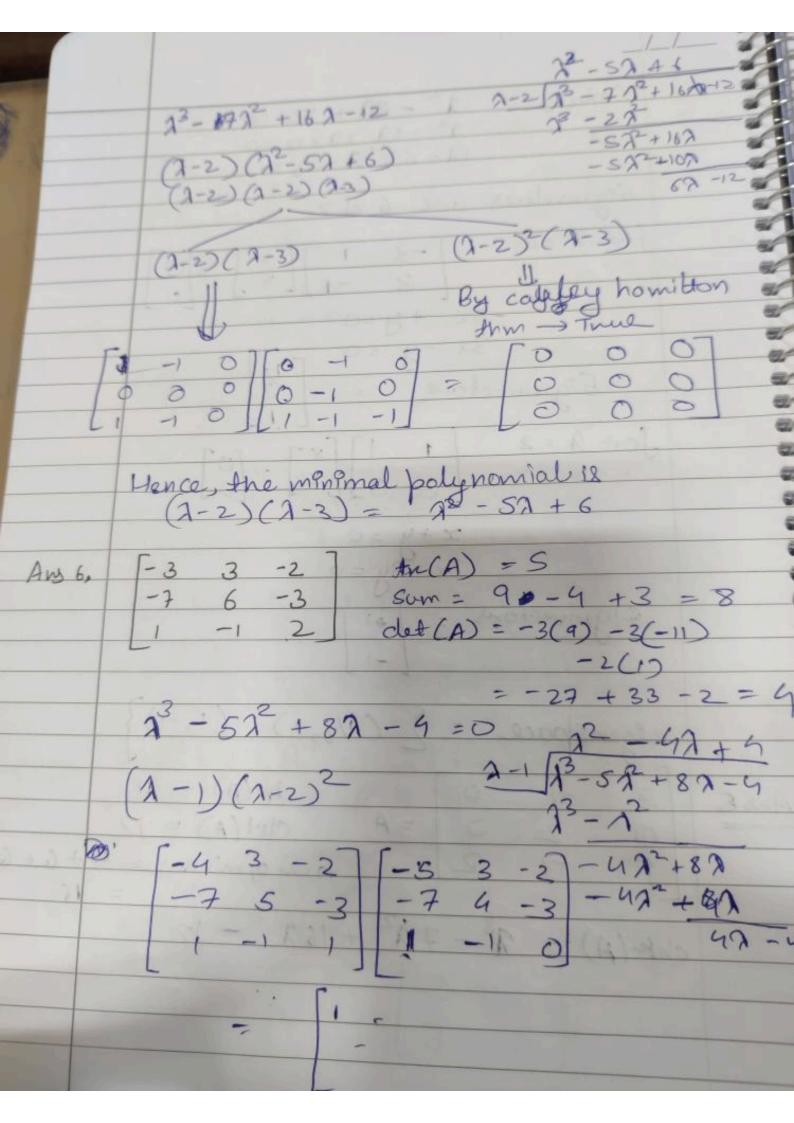
T(V_3) = (-2, 7, 1)
  al1,0,0) + b(0,1,0) + c(0,0,1) = (3,0,1)
         (a3b,c) = (3,0,1)
  a(1,0,0) + b(0,1,0) + c(0,0,1) = (0,5,1)
  (a, b, c) = (0, 5, 1)

a(1,0,0) + b(a,1,0) + c(0,0,1) = (-2,71)
           (0,b,L) = (-2,2,1)
Mothix Rep: 3 0 1
         -6+10 = 4
```









The matrix chre and minimal polynomial are the same. To gand =) Q where J = Q'AQ - 5x + 3y -27=0 -7x + 4y -37=0 eign vedon eigen Vector = -4x + 3y - 2z = 0 -7x + 5y - 3z = 0x-y+2=0

Ans. Let fo be the minfmal polynomeal of linear operator T, over a vector space => f(T)=0 (et g(t) be and another polynomeal such then; deg (f) = deg (g)

[ By the dept of minimal polynomia] By division theorem of polynomial forms over field, two exists polynomials

9(1) I r(1) such that fg+12=g where deg(n) < deg(s) Sutting T in the above egr, we get f(T).g(T) + r-(T) = g(t) => W(T) =0 Contradicts the minimality Hence the infinenal polynompal & always unique.

