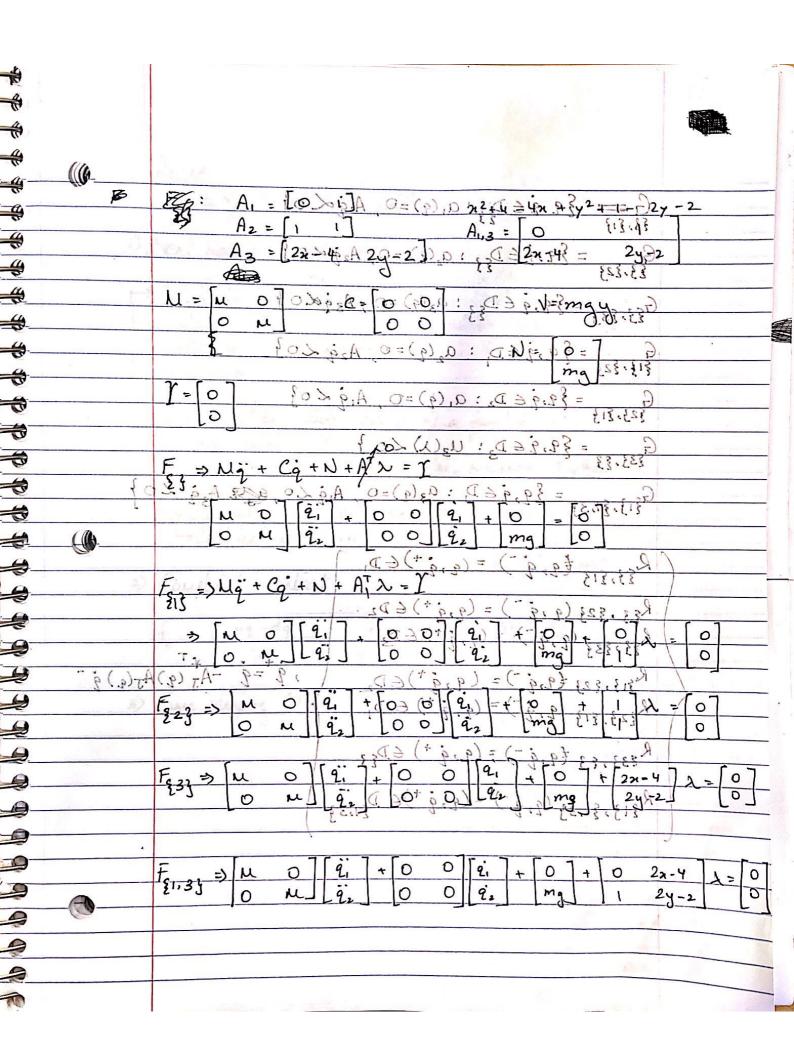
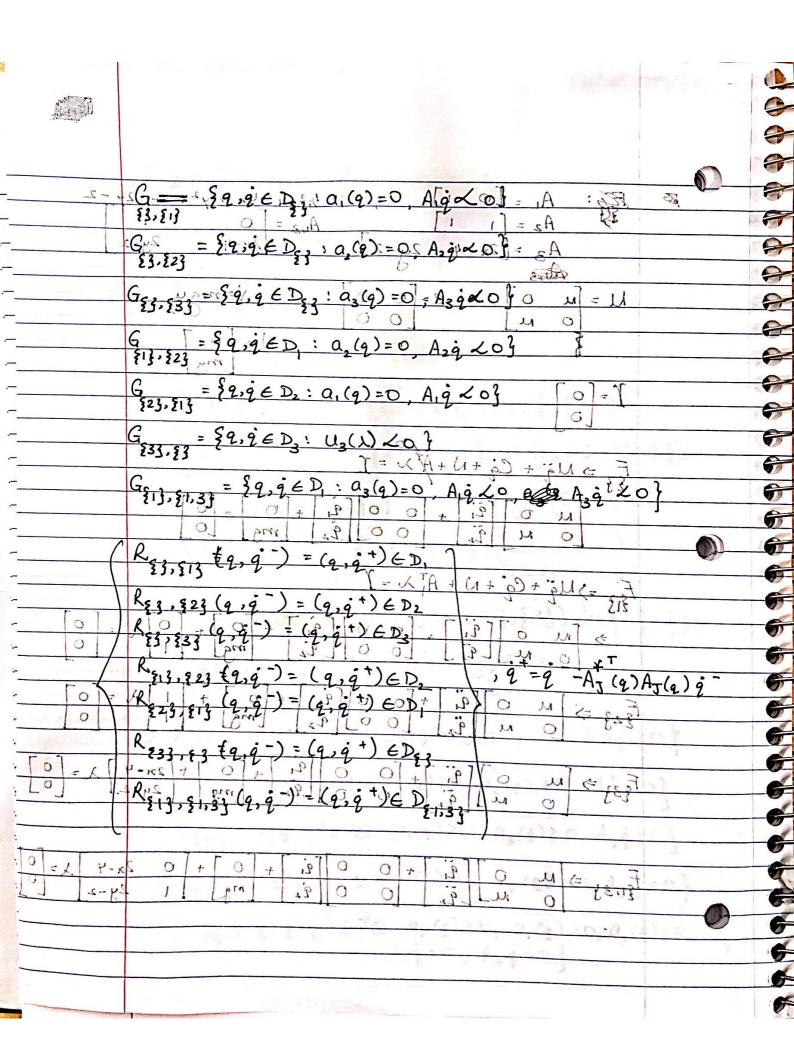
SAGAR SACHDEV ROBOT DYNAMICS AND ANALYSIS H.W 10 0 W=1 9=9.8 8. 9= 2 N = (N,K) D 9, (2,4) = 4 a2 (2,4) = x+4+1 a3(x,y)=(x-2)2+(y-1)2-52(1-y)+5(5-K)=(y,K) 50 J= 5 813, 823, 833, 83, 8133 (7. T. T) = H 6 60 D => Dz = {(q, q) ETQ: a, q) >0, a, (q) >0, a, (q) >0} D517 = \$ (2,9) ETQ: a, (9) >0, a, (9) >0, Aq = 0} 6 D324 = 3(9,9) ETQ: 9,(9) 20, 0,(9) 20, A, = 04 D = 37 = { (9, q) & TO: a, (9) >0, a, (9) >0, A, q = 0} $D_{\frac{5}{4},\frac{3}{4}} = \frac{5}{4}(q,\dot{q}) \in TQ: a_{1}(q) \geq 0, \ a_{1}(q) \geq 0, \ a_{2}(q) = 0, \ A_{3}\dot{q} = 0$





1

1.3

contactMode =

1

For (1,5)

```
te =
0.7825
contactMode =
[]
te =
 1.1404
contactMode =
[]
te =
1.3041
contactMode =
1
te =
2.0866
contactMode =
2
te =
 3.1298
contactMode =
1
```