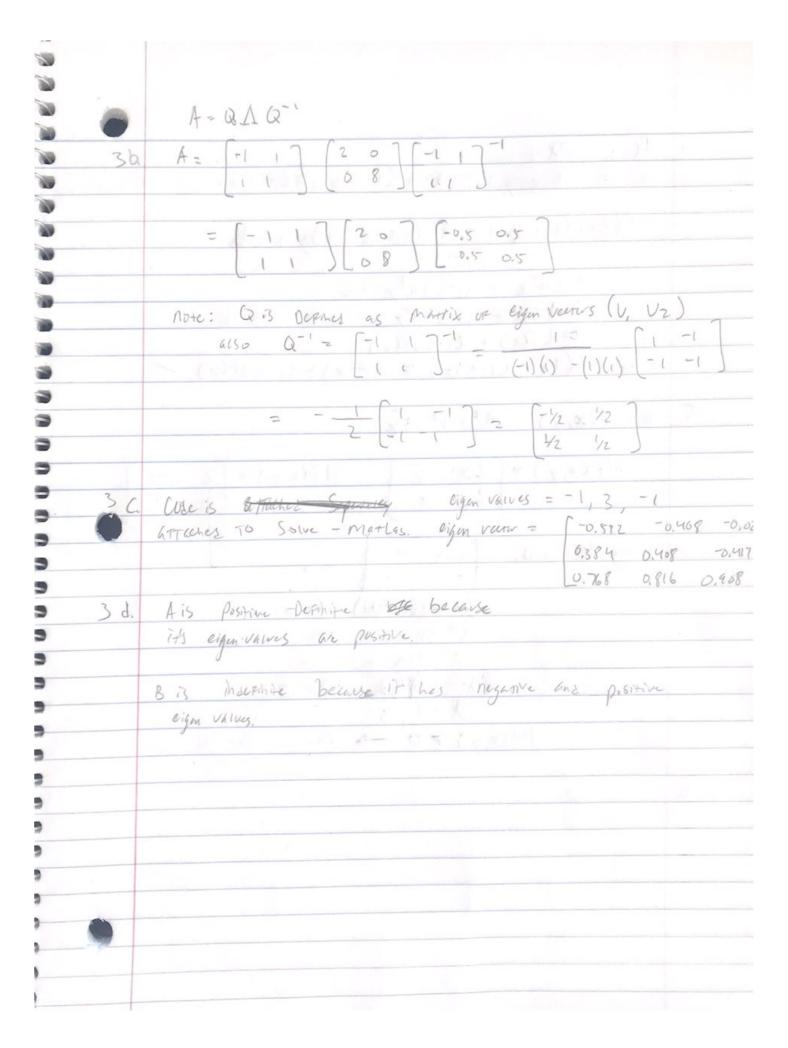


3. A = 5 3 16 24 a. A- 11=0 -12-101 + 16 = 0 e eigen Values LU 1 = 2; AV = 14 [A- ] V =0 13V, +3V2 =0 V, =V2 Les 1 × 8 - 5-8 3 VII = [3 03][V] = 0



flx = atx+b Der. of convexity: f(tx+(1-t)y)=tx(x)+(1-t)P(y)  $f(tx+(1-t)y) = G^{T}(tx+(1-t)y) + b$ - tatx + (1-t) aty + 5 = tate + (1-t) aty + tb + (1-t) b = t f(x) + (1-t)f(y)so  $+(tk+(1-t)y) \leq tf(x) + (1-t)f(y) \vee$ a. flx, y) = x2+ y2-xy UF(x,y) = [2x-y] Hf(x,y) = finding definitioness: [2-2 -1 -(1)(1)(1)=0Hf(b,y) > 0 -> Positive definite By hon Cose ATTACher