ME 710 Final Solutions.

- 1) Imput at A causes output at & same as imput at B causes output at A. Useful when access for excitation or sensing is restricted
- 2) & the competational offert
- 3) Stationery of Raylogh Quantient
- 4) It the states one intelly bounded by 12145

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- +) Raises or no charge. Varies by Frequences
- 6) 1) Non-solf-adjoint.
 - 1) Fored
 - 4) Nontres
 - Pik 2

) a) EI W"" + (eA + MS(x-€)) ü = 0 W(x, t) = sm(vt) ≤m(π €)

[EI (=)" - (PA · MS(x-\$)) w] smut sm(= 3) = 0

Multiply by son I , integrate over the long.

EI (7)" f - (PA f + M) w= 0

 $\omega = \frac{\pi^2}{\varrho^2} \sqrt{\frac{E_{\perp}}{\varrho_{A} \cdot M_{\tilde{q}}^2}}$

b) set M=0 W≈ = 5 JEI eA

3

2) The compliance is K'- 0.179 0.071

2) The compliance is K'- 0.179 0.536 0.214

2071 0.214 0.286

Green's method is

A Xivi = K' Xi

3 step, from [1 11] T

X

1 [.643.93.57] .73

1.17

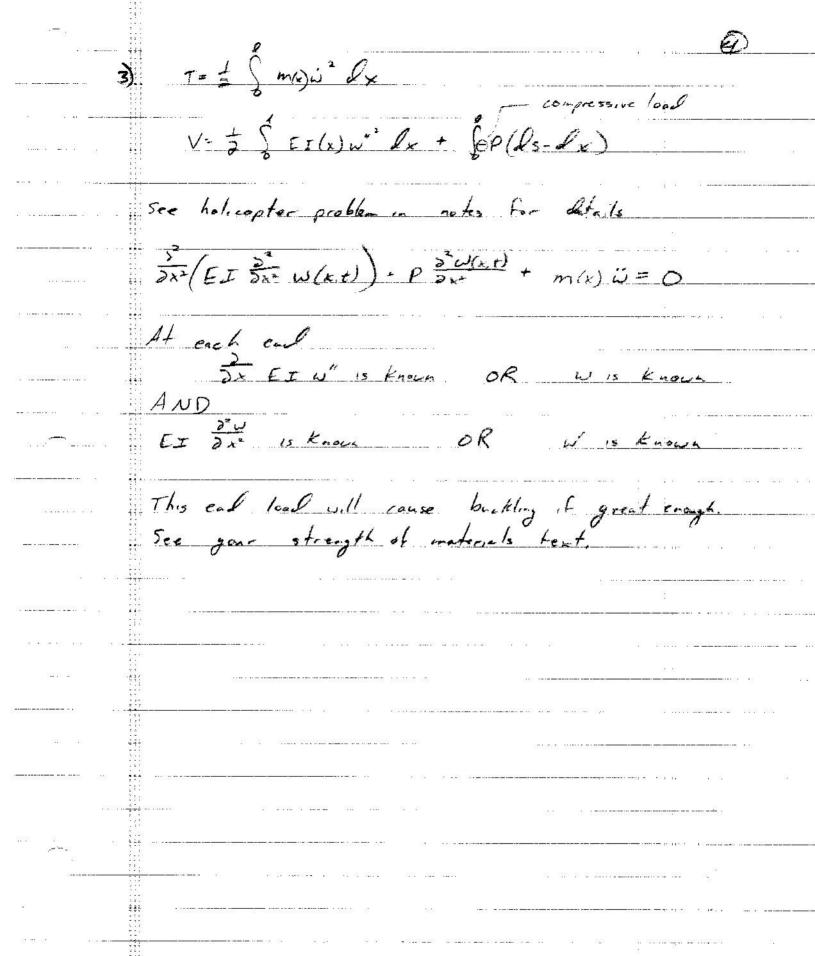
2 [.46.73 .41] 76

1.15

3 [.34.56 .31] 76

1.15

Osing subspace iteration, the process is the same because the reduced eigenvalue problem is a scalar problem (see notes). The rest of SSI is just Green's method.



4) T= \(\frac{1}{2} \left \ P A v^2 \left \ 2 \left \ P 1 p \overline{0}^2 \left \ \frac{1}{2} m \left \ \fra 5t. \$-\$ e1 is such - fe I, is 50 ds & dt -{(n(v-ris) 5v-m-(i-ris) 5d} - S S-PAUSU-PIOSOSO de [-m(ü+rö)sv -m-(ü+rö)sog de 5V = SG70 56 dr. SEIV SV'de - GJO'SO/ - SGJO'SOLZ + EJV'SV/ - FIV"SV/ + SFIV"SU PANTEIN" - 0, PIB-678" = 0

 0×0 , 0 = 0, 0 = 0, 0 = 0 0×0 , 0 = 0, 0 = 0 0×0 , 0×0 , 0×0 0×0 , 0×0 , 0×0 , 0×0 0×0 , 0×0 , 0