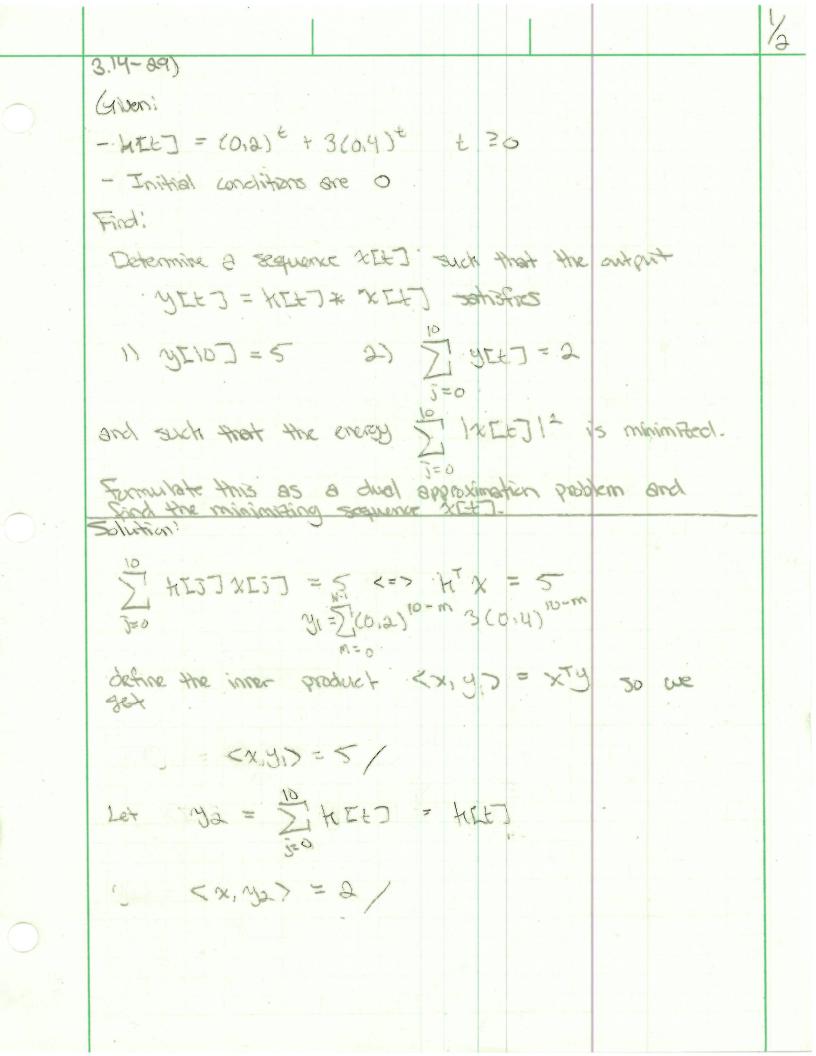
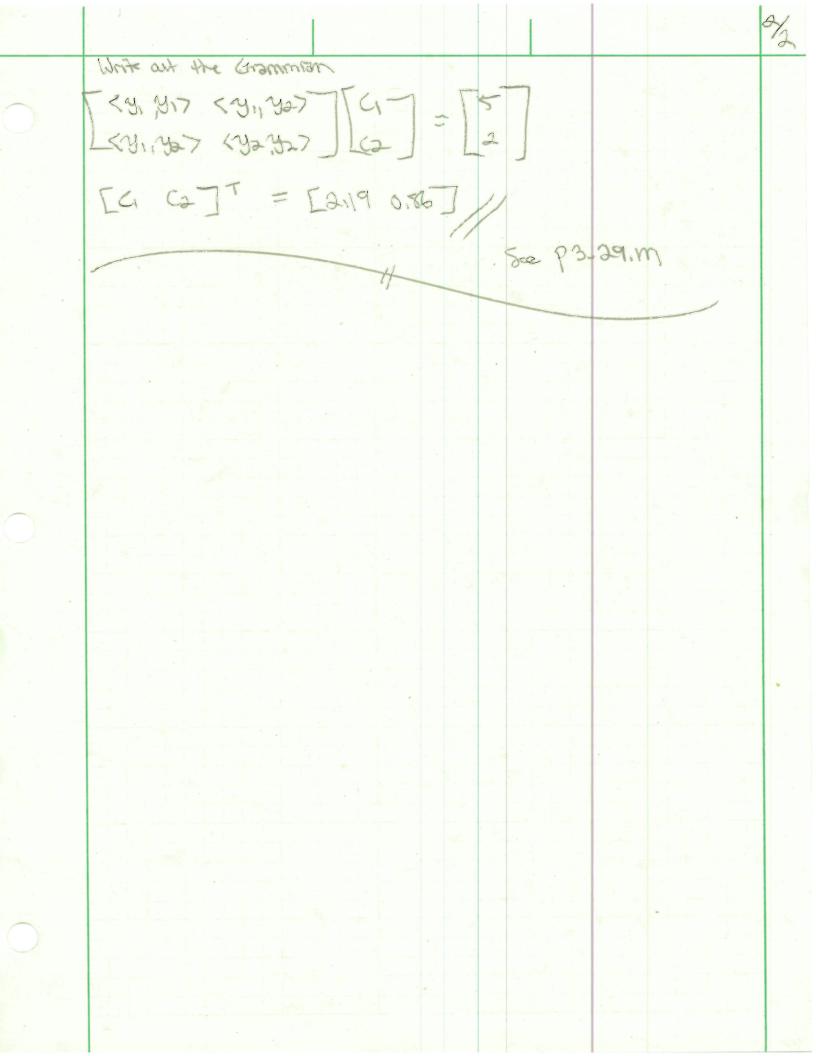
Brown, Akxander HUK J Given ! System NOS importer response feet) = 3e-2+ 44e-5+ yes 3 yes=0. First. Determine an input st.

(902) = 2 i S & 3001 At = 3 Solution: (3-26-7) +4=5027) ) x (T) dr Where we define the inner product <5,90 = 92 8 cmgcm dr So our first inner product is < x, y, > = 2/ No C KUNDT - -3 e - 4 e st + 2.3 5. Le get <x192> / and gas -3 e 2(2+1) - 4 e 5(2+1) +213 We write the gramman < y1 y2 > < y2 y2 > ] (2 = 3 = 5 [C, C=] T = [CO,15 0:35 ] See P3-28,m



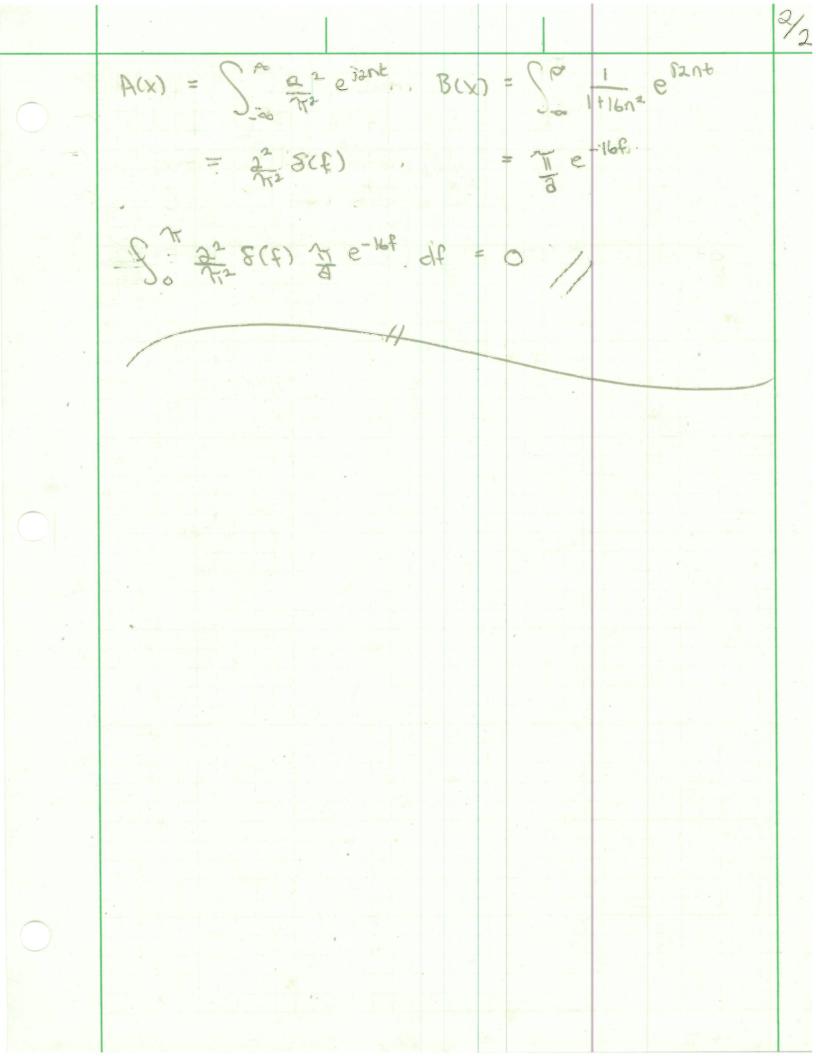


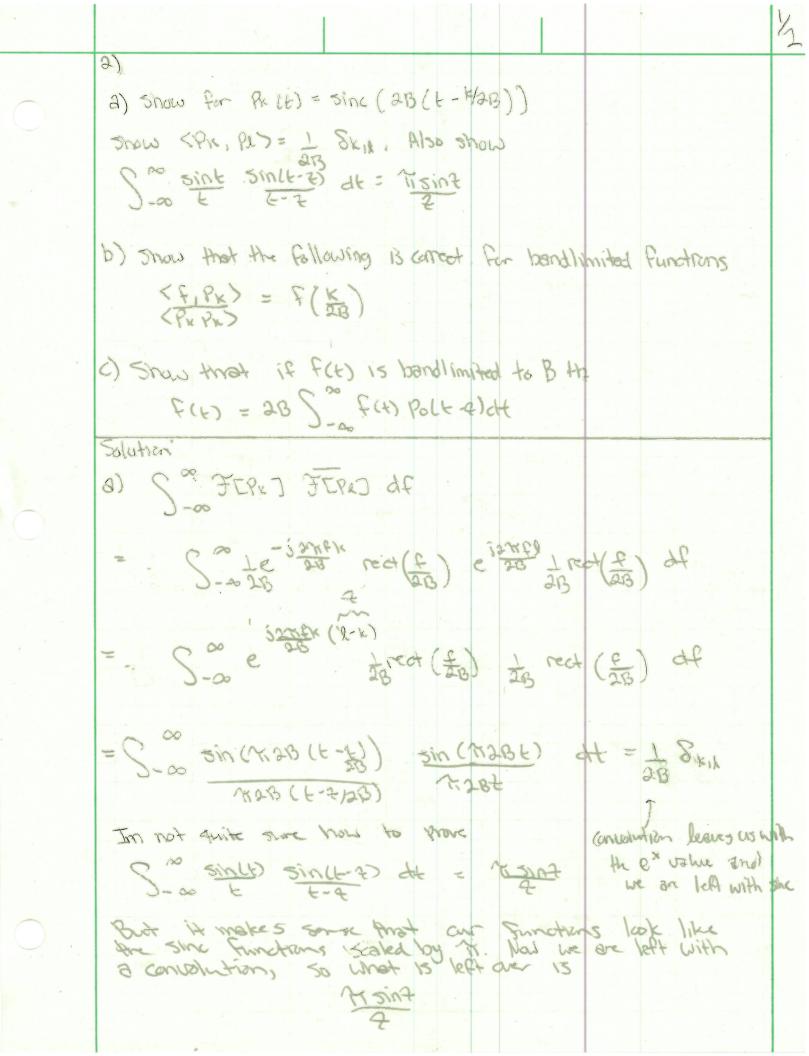
3.15-30) Given: Minimize XMQX Site Ax= b Find: Using the projection theorem, solve the Finishe dimensional Solution: X+10 X is the weighted norm <X, X) a. If we write which we see will lead to < 3", x > = 61 < 3", x > a = 62 ... < 3", x = bm X = A" QC => (AHQA) (= b => X = AHW CAHON)-16

3.15-31 XES 3 5 13 a Hilbert stace of the sets of Theory independent rectors conteste slink 11 & - & 11 stiminion of sizes sid XEM = span(2x, x2, 1, xmg) and < x, y > = a, = 1, 2, -, n. Find. Find equations for the solution which are similar to the ramal equations Solution: (x;y) = Ci implies that we are working with a linear variety 2 = 5 ciy; => (x, y2) = 4 and saying (x, y) =0 We write Ey, y, 5 (Yay) > meyor y, 5 91 < My 42> (Ma 42) 5 me 167 とろうろう

3:17:32 Given i PKIG] = 1 & JOHKE is orthonormal in respect to the inner product くなばりはける = ラ なばりりはり Find: Show that PKILET is an orthonormal set <Pr, Pa) = Sin es 27th = \frac{1}{N} + e^{\int\_2 \frac{n}{N}} \left( k-1) If K=1 -> <Px, PD> =1 IP K= 1-> <PK, Pa> = 0

3,17-33) Given 9(x) = e-t/2 For 0= t= 11 and E.CF) = [ SCF-KU) Find: a) Furth suits conflictant of FCE) b) The sum of the series 2 ( = 1+16m2) Solution: Use Pairerel's Treasure a)  $F(t) = \sum_{k=0}^{\infty} g(t-k\pi) = \sum_{k=0}^{\infty} e^{-ct-k\pi}/2$ bn = ( " = 1+-km) e-inwot at Wo = 2 I A function with parted to has the served formula b) It we let the inner product be ZXX+7 gx+7 Hen by Parschal's Heaven 2 anon = SACO BED dx





Sopret de = So FEPJ FEFJ de = 1 S-B e-25/261- rect (4B) F(F) e 2B = 1 8 B rect(f) F(f) e = F(K) () From the pressions result the muche famile situs 5(2) = ( S = F(2) sinc (2B (2- 14) dt = 08 SELES 6014-5) SEL =

