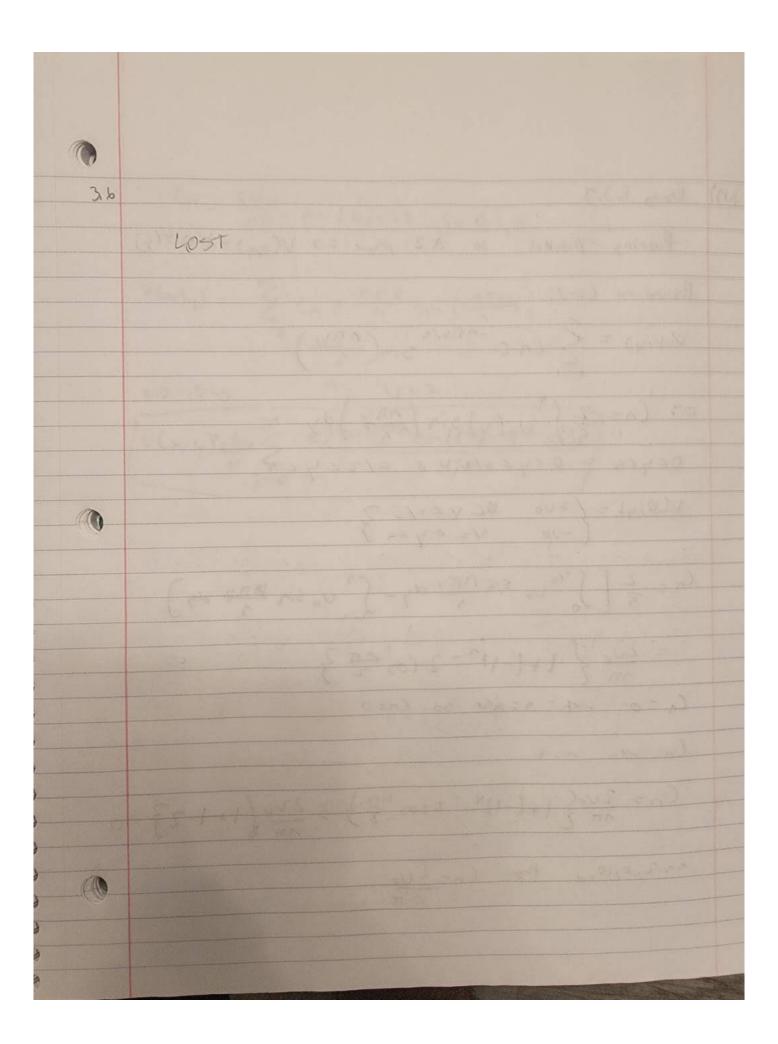
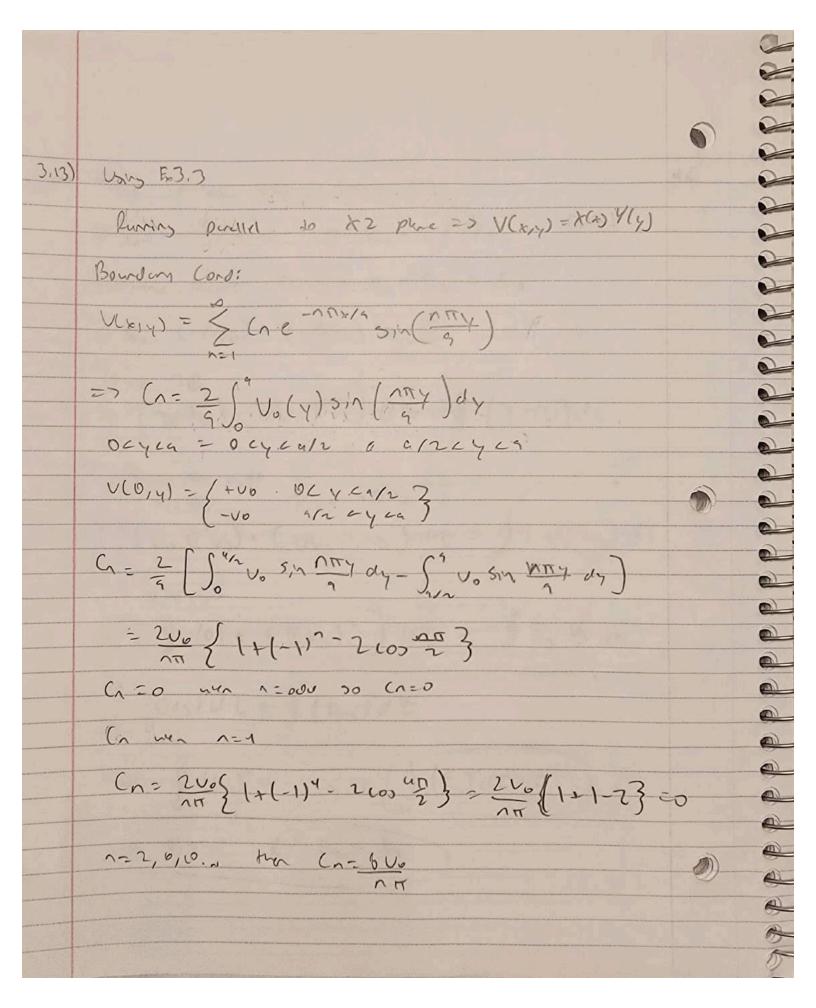


3.51 Tuo fields daying Course lan D2 E1 = - P/E0 D2 E2 = - P/E0 Difference between fields = E1 - E2 = E3 7. Ez= (-P/20) - (-P/20) = 0 Orcers 20) [TO2U)+ DU. PT] U= & (TDU)US T= U= B) E3 = - TV3)[(E, D'us) * (Dus. Dus) ar = g = 3(Dus) ds D2 V3 - 2 S((E3/0) + (PV3)2) UT = - 9 E3 V3 CB) (OV) UT =) (E) UT 0= [(B) 200 => /) (E) TUTEO So === 0 1 E2 = E,





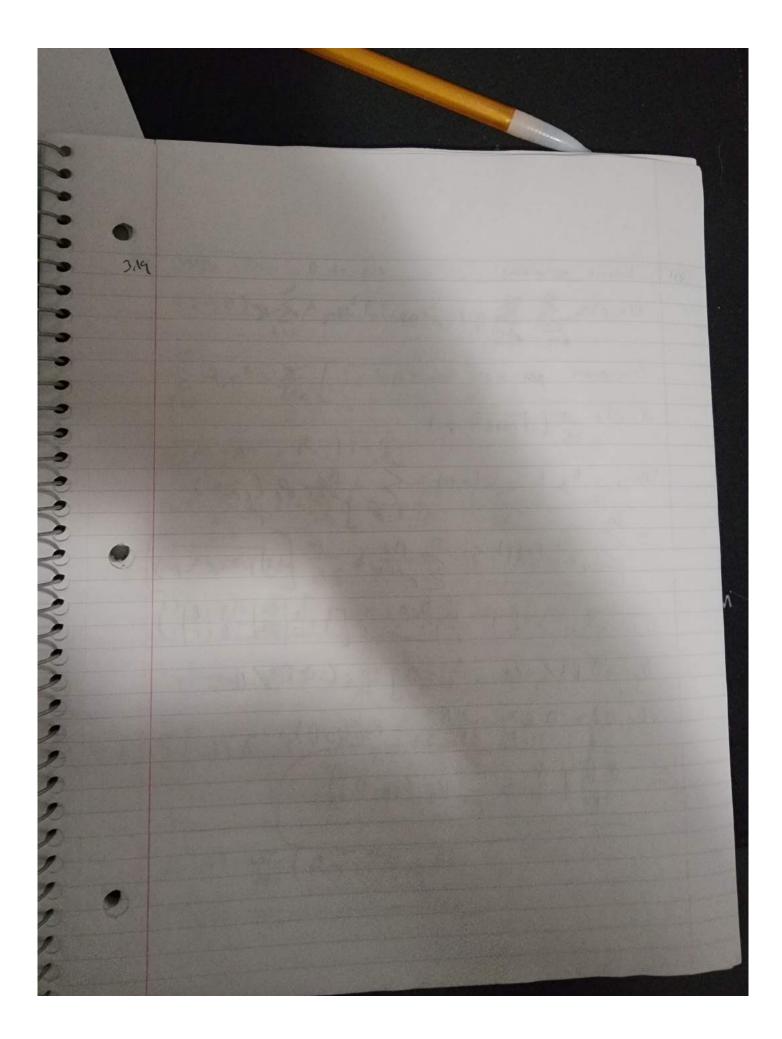
Cn= quo nn, n= (43+2) 3=0,1,2 V(x,y) = 2 (ne-nax 3/4 (194)) 3.14 Conducter 27 0= - EO dV 0 (y) = - 80 (du) =0 Very) in infinite sibili Vary) = 400 E 1 e may sin (nory) 000 J(y) = - 80 d f quo & 1 e - 5 m (2) 3/4-0 = - 80 400 { 1 (- nill) e - nil > 1 (nill) x=0 = 80 (100) (KH) \ e - NTX SIX (NTY) | +00 O(4) = 420 Vo 5 3m (ntry)

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a) bener potential brance 212) Lapl x Ey = d2V + d2V =0 Beardon Condi U(x, 0)=0 V(x09) =0 V-(0, 4)= [M4 Uxyy) = (Ae to + Be to) (suky+ Doosley) V(6,0)=0-> (Aeka+Be-60) Dzo V(xx) = E (x shh (ntt t) on (ntt) Voly) - & Co soul (nTb) su (nHy) # Formiers: Casinh (275) = = = Jo Voly) on (27) (n = 2/11/2) So Vo (4) sin (q) dy Voly)= Vo then (n= 4Vo 27 V(x,y)= 4V0 / 514h(nit/s) 514nit/s)

TI /=1,75

316 cranbe reporter solves X(x) 01/2 => X(x) = Asin(x) + B cos(60) Y(y) = (sin(lx) + Dsin(ly) 2(2)= E (2 Jenes) + E; (2) Erel2) A=L=0, B+0, 0+0, k=10/4, 1-10/4 Put together = U(x,y2)=> \(\langle (n,m sin \langle \frac{nmx}{9} \rangle 50 (MT) 5,0h (TT) 124m2 Vo = { { [(n, sin (n) x) sin (m) y sin h (1) \ n + 2)] Founds: Consinh (TI 502+22) = (2) 2 Vo 5 9 5,1 (nnx) 3,4 (nt) y drug -1600 V(x1412)= 1600 5 5 (Sin (9) Sin (9)) (Sinh (11) 1/2/2



3/27) General solution: VIT. 0) = & Be Pel (000) for r>R Polynomius gon sols U(r,0) = 0 (Jr4R2 -r) Using Ey 1: U(1,0) = & Be Pe (co.b) = & be peli) 50 D Be = 8 (Jr2+R2-r) Jr2182 = r (1 + 02) /2 = r [1+2[82] - 1 (R)] Do = 0 82/400 B, = 0 B2 = 0 R4/16 % V(1,0) = 0 12 - 224 - P2(6050) +... ~ JR2 (- R2 P2 (cost))

99999999 bi veris from 0 to gir lar TER V(r,0)= \$A, r P, (coso) => \$ A, r. ZA, re . o [[12+12 - 1] 99999999999999 => \(\int A \, \tau = \frac{1}{2\int R} \) \(\tau \) A. = 0 R/26 A, = -0/240 Az = 5 V(1,0)= 5 [1-1 (000 22 P2 (10)0)]) So ton: V(1, 0) = O[Jr2+R2-1] { (-1) A, r = 3 (R+ 12 - 6K3 + ...-) V(1,0) - 0 (R+rh(1050)+12 P2(1000)) 3.24) Laplue of with no 2 deputers

\$\frac{1}{5} \frac{1}{3} \left(5 \frac{1}{3} \right) + \frac{1}{5} \left(\frac{1}{3} \frac{1}{2} \right) = 0 545 VL2,0)=5(5) \$(9) 5 55 (5 % (5(5) d(1))) + 32 d2/5(5) 0(g)) = 0 - 0 ds (5 05) + 3. 5 020 =0 C1 = 5 0 (5 ds) (2 - 1 120 1 120 = -62 => Ø = A (ask \$ +B sin k \$ U= 62 => 5 d (5 ds) = 625 ~> 5 d (5ns^-1) = k3 => n25 = k25 1= = > 52 d25 + 5 d25 - k25 = 0 = 5(3) = (31×+D5-14 Put to in diff equation 5 ds (5 ds) = 625 => = 0 => 5 ds (...)

5= Un In(s) +1) D& C co conduty po 16=0 in ditt 1 020 =0 =7dd = A 26= Ad0=> 0=Ad+B U(s,d)= E [sk(skcoskp+bksinkd)+)+ ((lh(s)+D)
+ (Ad+B) Neglect (AØ+B) V(5,0) = E [sklakcooky + bk sinky)] + 40 + bolals) bo & go are constants go pull into the trons. VIS, 0)= 90+60/1/5)+ { [staclos(20) + be sible 0)] +5-10 (which) + unsincepl)]

3,26) Inave! V(5,0) = and + & sk (sk looked + be sinky) blow up Ortsin: V(3,0)= 90 + & 1 (ch cooled + de sin 100) 1n(s) 9 3 blan up at 320 5-2- Eo (dVont - dVin) / s=R =7 95:59 = -80 \[\frac{2}{pun} \left(\cook 4 + dk \sin kd \right) = \frac{1}{pun} \left(\cook 4 + dk \sin kd \right) = ERT-1 (ak cost) + bksnkg)3 ac Edero before a escrit k=5, 9= 586 (105+1246) => 9= 5% (R4b5 + R4b7) => 10% ok4b5 b5 = 10% ok4) d5 = 10% o (V(5,0)= 35 in54 55 for 5 = R V(3) = 9 51 50 R6 for 52K