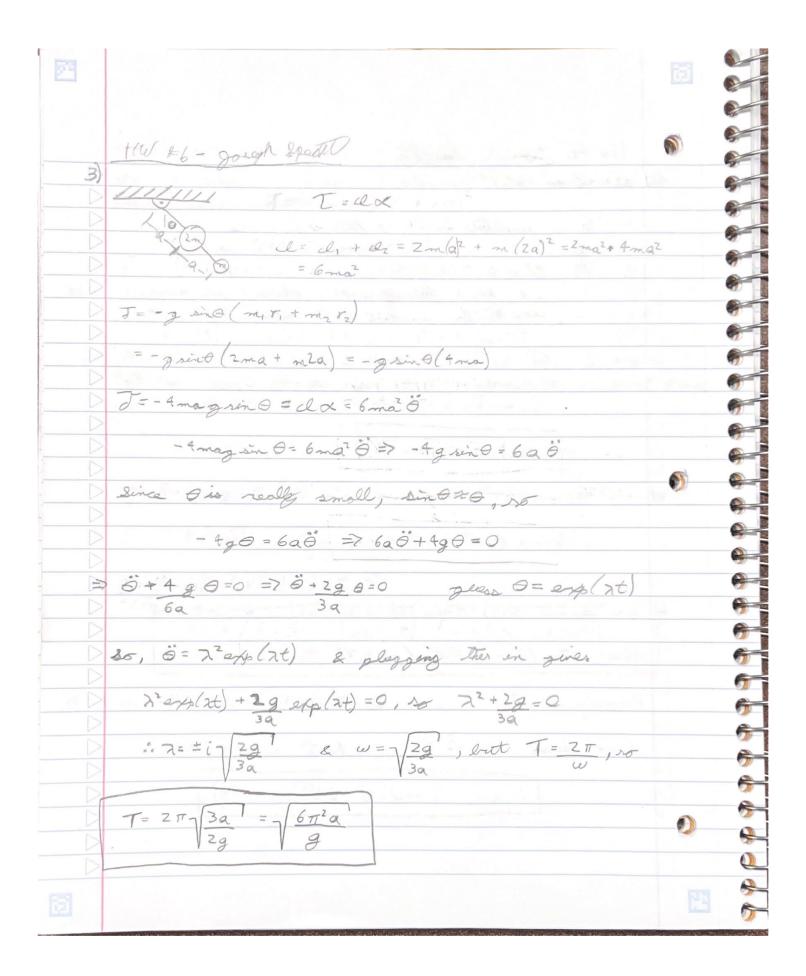


HW#6-gaseph Sychlo Dusing an online solculatory we get $u''(x) = \underline{A(z(z^2)^{3/2} - z^3)}$ e this simplified gives $z(z^2)^{3/2}$: bell = K/2 -0



HW #6 - Doseph specht 40) x(t)= (10x(wt -9)) 4=5, amplitudo is = 5 & thes is (9,= 1/3, @ =0, (100 (-9)== (, i == acos (1/2)== 1/3, ent we know the graph is almost @ a max, so it has to be positive (1st quadrent) W= Z, @ z= T/6, we have a max, so Geos (wt - T/3) = C, :. w= T/3 = T/3 · = 2 x(to) = 5 cos(2t-1/3) e) in lags 1/2 extind son, so \$2 = \$1 - \$\frac{1}{2} = \frac{17}{2} = \frac{17}{2 : x (t) = 5 sin (26+ T/6) we know x(t) = A cos(2t) + B sin (wt) & G= V AZ+BZ also tan (9) = B = tan (3) = V3, 20 B = V37 A Plugging this in we get C1 = VA2+3A2 = VAA2 = ZA, so A = % 2 we know B= V3 = , so A= = & B= = \(\frac{5}{2} \) :. x(t) = 5 cos(2t) + 5 13 sin (2t)

HW#6 - Doseph Speckt a) It x robes to som 0, exp(int) + Or exp(-int), then x= 0, eos (wt) + 0, i sin (wt) + 02 eos (wt) - 02 i coo(wt) a grouping these terms gives, x = (0, +02) cos(wt) + (0, i - 02i) sin (wt) but we know from part (the sonstants in front of each 5 = 0, +02 & 5 \(\frac{5}{2} \) \(\frac{5}{2} ワーシーウェーラ ションランランコーランランコーランコーランコースのこ ₹ 02 = \$ + = V3 i since i= == V-T = V-T , so V, is Di= == == (= + + = v3i) = = = = = v3i : x(0)= (5-5iv3) exp(2it) + (5+5iv3) exp(-2it)

WL= VI-32 W2 11 Was 6 - googh speckto Faroy 5-CV Q= 22m ex= T tray + Tp = f mx = L(Ftray) + J (mg sint) D Finar - Lc (+++0) - L mysind, sub +=0, so find = - L(cLo) - Longrino = mLo= - cLo - mgsin 9 13 m & 6 + c & 6 + mg sin 0 = 0 2) is 0 40, sin 0 20, so (sin 0 = 0+...) mf6+ (10+mg0=0 => 0+ 50+ 20=0 quessing 0 = exp(xt), we get 22 exp(2t) + = > = xp(xt) += exp(xt)=0, so 22+ = 2 + == 0 use quadrate formala to get 7, so 999999 7 = - = + V(c)2- 72 & using 5 = 2 mwn, so Z= Zwn (-5+ V4wn 52-4wn (2) whi This is equal to mext page)

