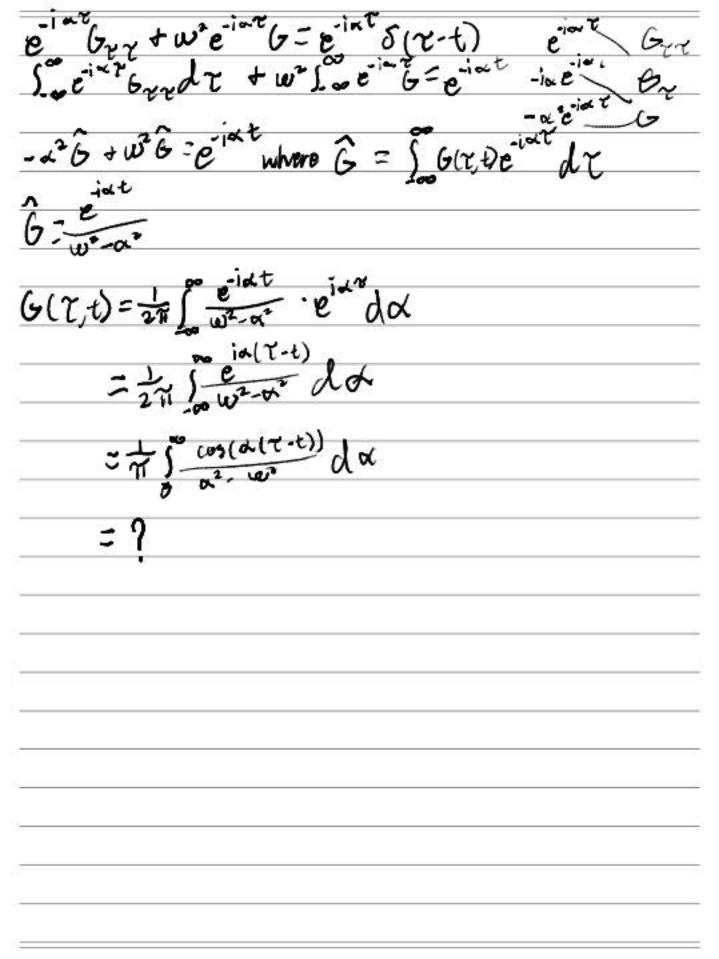
4.8 Show that the solution
x + w1x zfit) for t20 where
x(0) and x of zero are prestibed is
by the mothed of breen's functions is
by the mothed of breen's functions is $x(t) = \frac{2}{3} \sin \omega t + x(t) \cos \omega t + \frac{1}{3} G(x,t) f(x) dt$
(2/h(w(t-7)); ~2+
where $G(\tau,t) = \left\{\frac{2M(\omega(t-\tau))}{\sigma}; \tau \ge t\right\}$
$(Lx, 6) = \int_{0}^{\infty} 6Lx dx$ = $(6x - 6x)/_{0}^{\infty} + \int_{0}^{\infty} (6xx^{2}+\omega^{2}6) dx$
= (6x-6xx)/2+ fx(6xx+w26)dr
Z lim (6(k,t) x(k) - 6, (k,t)x(k) - 6(0,t)x(0)+6(0,t)
7 lim (6(k,t) 2(h) - 62(k,t) 2(h) - 6(0,t) 2(0) + 6(0,t) + 52 1 6 d2
lim 6(K,t)=0, lims 62(B,t)=0 L=L*
(Lx, b)=-6(0,t) x(0) + 62(0,t)x(0) + 5xLbdt
6 yr + w2 G = S(7-t)
Gyz F W O - OCC OI



4.13 show that the solution u"= p(x) u'(0) = u'(1) >0 13 given by W(x) = K+ S(x-x)H(x-x) q(a) dx=K+Sx(x-x) q(x)12 where k, is an orbitrary constant S, GLn dig = 6 (1/x) u(1) - 6, (1,x) u(1) - 6(0,x) u'(0) + 6,(0,x) u(0) + 5, uL6 dig G (0, x) = G (1, x) = 0 G = 5(5-2)  $G(\xi, x) = (\xi - x)H(\xi - x) + A\xi + B$ H(1-x)(AZO H(\xi-x)Z \\ 1 \\ \xi \x 9 con tradiction G== 5(E-20) + F

$$a = -\frac{1}{5\pi i}$$

$$= -3$$

$$F = -3\pi i$$

$$G_{5} = H(\xi - x) - \frac{3}{2}\pi i + A$$

$$G_{5}(0, x) = H(-x) + A = 0$$

$$A = -H(-x)$$

$$G_{5}(1, x) = H(1-x) - \frac{3}{2}\pi + A = 0$$

$$G(\xi, x) = (\xi - \pi)H(\xi - x) - \frac{1}{2}\pi \xi^{3} - \xi H(-x) + B$$

$$\int_{0}^{1} G(\xi, x) d(\xi) = u(x) - 3\pi \int_{0}^{1} \xi u(\xi) d\xi$$

$$\int_{0}^{1} (\xi - x) H(\xi - x) - \frac{1}{2}\pi \xi^{3} - \xi H(-x) + B(x) M(\xi) d\xi$$

$$\int_{0}^{1} (\xi - x) H(\xi - x) d(\xi) d\xi - \frac{\pi}{8} - \frac{H(-x)}{2} + B(x) + 3k\pi$$

$$= u(x)$$