| | LAMO MA |
|------------------|--|
| | |
| | |
| | MATH 19 PROBLEM SET 2 SOUTIONS as Josin 2x cos 3x dx |
| <u> </u> | as lo sin 2x cos 3x dx |
| | - 0 18 18 10 G 10 G 10 G 10 G 10 G 10 G 1 |
| | b) Uo sinc(16x) dx |
| | = 31E |
| | c) JosinxCosx - 2sinx + 3sin2x + 4) dx |
| | = Josinxcos x - 2sinx + 3sin2x + 4) dx = Josinxcos x dx - So 2sin2x dx + So 3sinxsin2x dx + Jo 4sinx dx |
| | = -2TE d) J= Csnx+cosx+ sinlox+coslox)? dy |
| - (| d) Jo CSMx+cosx+ SINIOx+cosl0x)?dx |
| | = 20тс |
| | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| 2. | a) equal because both are periodic from 0 and 200 |
| , | and the square maker all integral values positive. |
| · | b) Jo sm2xdx = Jo C1-c052x) dx |
| | $\int_0^{\infty} \sin^2 x dx = 2\pi - \int_0^{2\pi} \cos^2 x dx$ |
| | and the square maker all integral values positive. b) $\int_{0}^{2\pi} \sin^2 x dx = \int_{0}^{2\pi} C_1 - \cos^2 x dx$ $\Rightarrow \int_{0}^{2\pi} \sin^2 x dx + \int_{0}^{2\pi} \cos^2 x dx = 2\pi $ |
| ~~. | 1 *xvbstitute a) |
| | L> 12th cos2x dx+ 10 cos2x dx = 2TT |
| Σ_{-}^{L} | Lake Company of the C |
| | $= 2\int_0^{2\pi} \cos^2 x dx = 2\pi$ |
| | $= 2\int_{5\pi}^{0} \cos^{2}x dx = \int_{5\pi}^{0} \sin^{2}x dx = \pi$ $= 2\int_{5\pi}^{0} \cos^{2}x dx = 2\pi$ |
| · | CARREL MARKET AND A SECOND OF CROPPING RED |
| 3. | fco=x=x=L0,2T] |
| × | |
| | A = 12th SINX = 12th A SINX (SINX) + 10 B CONXCEINX) dx + |
| | -21c = AJ2 5102x dx |
| | -> A= -21c/16 = -2 |
| | $B \Rightarrow 2\pi$ |
| |) o x cos x = |
| | |
| | → B=0 |
| | |
| | JO X 5/1/2X = J C SIN22 2 |
| | $C \Rightarrow \int_{0}^{2\pi} C = $ |
| | V 0 |

3. cont. 12th D x cos (2x) = 1 0 D cos 2 2x dx 4-az-1/24 (351/4x+251/2x+1) cos4x+c -72 cos (2x) + 12 cos (4x) + 8 cos (6x) - 3 cos (8x) + c b) 1 (12x-3sn(2x)-3sn(4x)+sn(6x))+ C $\frac{\times}{16} = \frac{1}{32} \sin(2x) + \frac{1}{6} \sin^{5}(x) \cos(x) - \frac{1}{24} \sin^{3}(x) \cos(x) + \frac{1}{16} \sin^{3}(x)$ c) = seccro csec2x-3) + c Sec3x_secx + c $\frac{3}{d}$ $\frac{3}{-1/5}$ cot $\frac{5}{(4)}$ $\frac{3}{-2}$ or $\frac{1}{15}$ (cos (2x)-4) ast³ (x) so 5. * cos Ca+B) = cosa cosB - SINXSINB (cos cxta) = C [cos x cos a -snx sin a] = Ccosxcosd - Conxsind = (Ccos x) cos x + (-Csna) snx so, Ccos a = 1 and To find C, ((cos a)2+ (-(sna)2=2 $C^2\cos^2\alpha + C^2\sin^2\alpha = 7$ C2 = 2 C=12 To find a, - Csin a = 1

5. cont. ⇒ √2 (cosCx + 3TE/4)) = Sin x + cos x occurs when cos x 1s max (1). so when max = 12 6. S cosx-sinx dx = J C-17 sin x + Ci) cosx dx = J VZGSCX+TYA) dx = 1 (sec Cx+TU4) dx * n= x+ 17/4, du = dx = 1 Secudu = log (tan (x+ 10/4) + se((x+70/4)).

VZ
on V2 tanh (tan(x/2)+1) 7. a) Jx2-25 - 5sec+ C*5)+c OR JX225 + 5 tan (5/JX325) b) \\ x2\1-x2 dx $= -\sqrt{1-x^2}$ c) 31=18 d) cosh-1(4) or log C4+VIS)

ally to be a solution of

man water you the comment