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Materia: Matemática aplicada

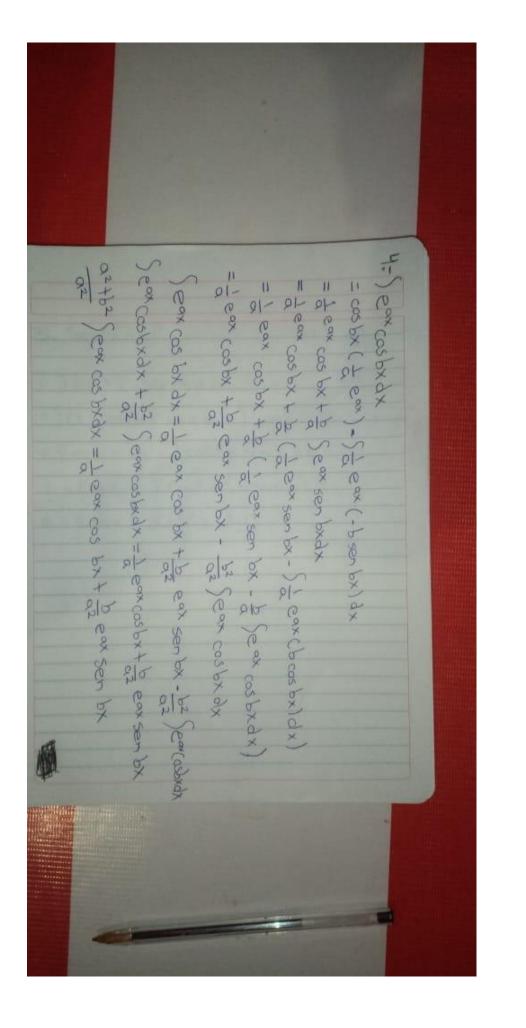
Trabajo: Problemario

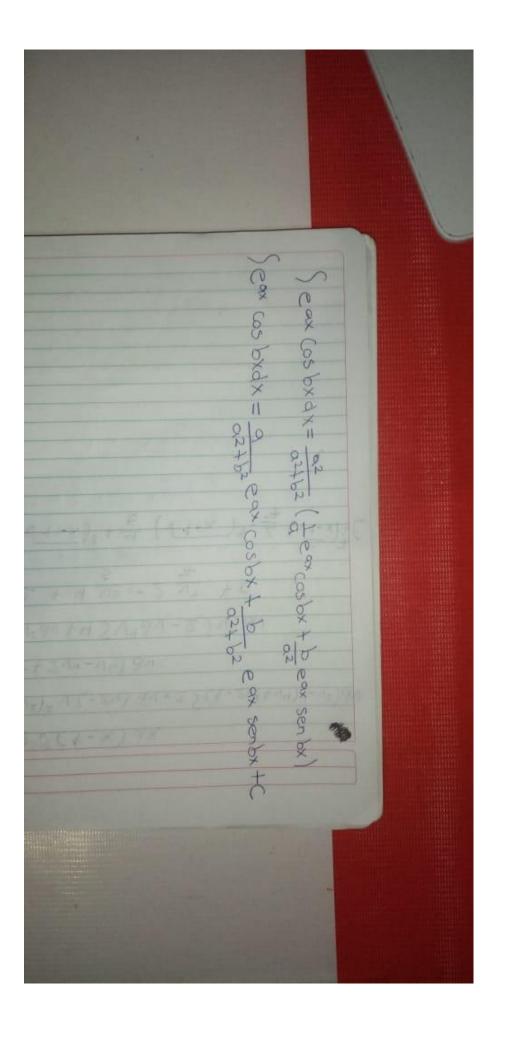
10 de julio del año 2020

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1.5 x2 sen xdx
Sudv = U.V - SVdu
U=X2 dv=SenXdx
du= 2x.dx Sdv = Sonxdx
 dv = 2 \times dx V = -\cos X
S udv = UV - S vdu
5 \times 2  sen \times dx = x^2 (-\cos x) - (-\cos x) 2x dx
= - x2 cos x + C2x. Cos x dx
52x. Cosdx
V=2x dv=\cos x dx
du = 2dx V = sen X
Sudu = uv_ Zudu
52xcos xdx = 2x. senx - Scsenx) 2dx
= 2x . senx -2 S sen xdx
= 2 \times .  sen\times + 2 \cos \times + c
5 x^{2}  x  x  dx = -x^{2}  cos x + 5 2 x .  cos x  dx
= -x^{2}  cos x + 2  x  sen x + 2  cos x + C
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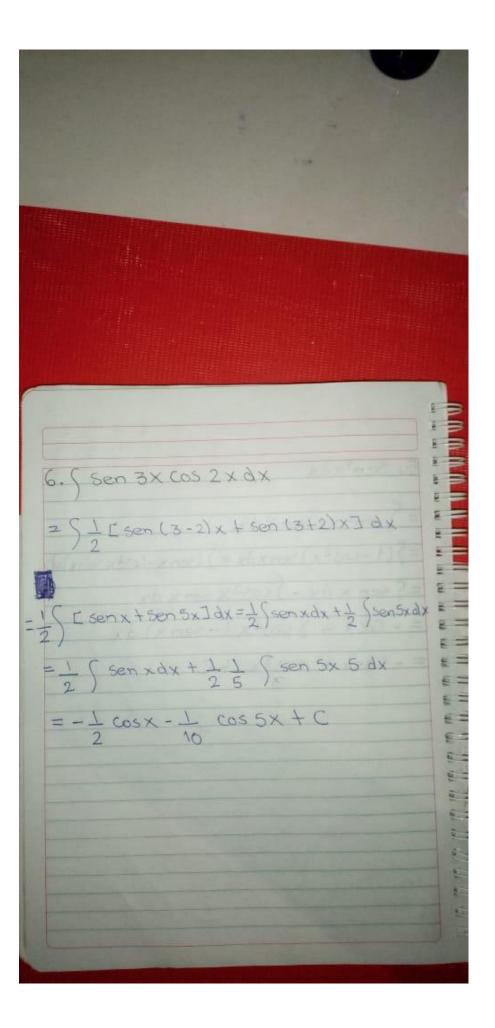
2. 5 x2 e2x dx S x2 e2x dx = x2 (1 e2x (2xdx) = 1 x2 e2x - 5 xe2x dx $=\frac{1}{2} \times^2 e^{2x} - \left(\times \left(\frac{1}{2} e^{2x} \right) - \right) \frac{1}{2} e^{2x} dx$ $= \frac{1}{2} x^{2} e^{2x} - \frac{1}{2} x e^{2x} + \frac{1}{2} \int e^{2x} dx$ $=\frac{1}{2}x^{2}e^{2x}-\frac{1}{2}xe^{2x}+\frac{1}{2}(\frac{1}{2}e^{2x})+C$ $= \frac{1}{2} \times^2 e^2 \times - \frac{1}{2} \times e^2 \times + \frac{1}{2} e^2 \times + C$

3.-5 x2 / (1-x) dx = S(1-N2)2 V (-2N) dV = 2 S (1-2N2+N4) (-N2) dV = 5 (-42 + 244 - 46) gn = -2 5 V2 dv +4 5 V4 dv - 2 5 V6 dv = -2 \frac{13}{3} + 4 \frac{15}{5} - 2 \frac{17}{7} + C 3 = -2 (\(\sqrt{1-x} \)^3 + \(\sqrt{1-x} \)^5 - \(\frac{2}{7} \) (\(\sqrt{1-x} \) + \(\frac{1}{7} \)





5. Sen'xdx = Sen2 X. Sen Xdx $= \int (1 - \cos^2 x) \operatorname{Sen} x \, dx = \int (\operatorname{Sen} x - \cos^2 x \operatorname{Sen} x) \, dx$ = $\int \sin x \, dx - \int \cos^2 x \sin x \, dx$ $= -\cos x + \int \cos^2 x \left(-\sin x\right) dx$ $= -\cos x + \cos^3 x + C$ 4



) sen (Imx) dx+ Sen (Inx) dx=xsen (Inx) - x cas (Inx) Sen Clax) 0x = xson Clax) -x cos Clax) + C Sen Clnx) dx = + x sen (lnx) - + x cos (lnx) sen chix) dx = xsen chix) - x cos chix) sen (Inx)dx= x sen (Inx) - x cos (Inx) -) sen (Inx)dx

8. X2 Inxdx $= \ln x \cdot \frac{x^3}{3} - \int \frac{x^3}{3} \cdot \frac{1}{x} dx$ $= \frac{x^3}{3} \ln x - \frac{1}{3} \int x^2 dx$ $=\frac{x^3}{3}\ln x - \frac{1}{3}\frac{x^3}{3} + C$ $= \frac{x^3}{3} \ln x - \frac{x^3}{9} + C$

9. S Cos (Inx) dx = x cos (Inx) + x sen (Inx) - S cos (Inx) dx) cos (In x) dx + 5 cos (Inx) dx=xcos (Inx) +x sen (Inx) COS CINXIAX=) cas (Inx) dx = x cos (Inx) + x sen (Inx) COS CINX) 0x=1xcos (Inx)+1xson (Inx)+0 x cos clnx) +x sen clnx) + C