Class work 8

Sols

Names:

Evaluate the integrals:

$\int \sin(8x)\cos(5x)\,dx$ $= \int \dfrac{\sin(13x)+\sin(3x)}{2}\,dx$

$= -\dfrac{1}{26}\cos(13x) - \dfrac{1}{6}\cos(3x) + C$

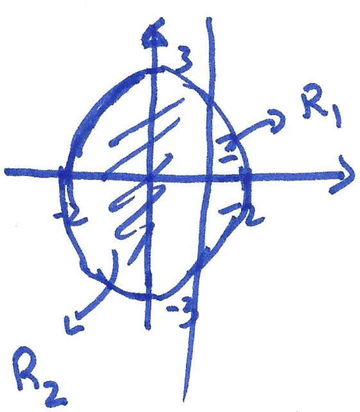
$\int \sin(x)\, sec^5(x) dx$ $= \int \dfrac{\sin x}{\cos^5 x}\,dx = -\int u^{-5}\,du = \dfrac{1}{4}u^{-4} + C$

$u = \cos x$

$du = -\sin x\, dx$

$= \dfrac{1}{4\cos^4 x} + C$

Set up integrals that compute the area of each region bounded by the ~~hyperbola~~ ellipse $9x^2 + 4y^2 = 36$ and the line x=1.



$\text{Area } R_1 = \int_1^2 \sqrt{36-9x^2}\,dx$

area of the region bounded by the elipse

$\int_{-2}^{2} \sqrt{36-9x^2}\,dx$

$\text{Area of } R_2 = \int_{-2}^{2} \sqrt{36-9x^2} - \int_1^2 \sqrt{36-9x^2}\,dx = \int_{-2}^{1} \sqrt{36-9x^2}\,dX$