



## Mi Universidad

*Nombre del Alumno* *Alfredo martinez gijon*

*Nombre del tema de la 4 unidad*

*Parcial 4*

*Nombre de la Materia* *matemáticas aplicada*

*Nombre del profesor:* *juan jose Ojeda trijillo*

*Nombre de la* *Licenciatura enfermería*

*Cuatrimestre 6*

# Calculo integral

$u = 2x \quad du = 2 dx$   
 $v = \cos x \quad dv = -\sin x$   
 $\int 2x \cos x dx = x \cos x + 2 \sin x + C$

6)  $\int x^2 \ln x dx$   
 7)  $\int x \ln x dx$   
 8)  $\int \ln x^2 dx$   
 $\int \sin^3 x dx = \int \sin^2 x \sin x dx = \int (1 - \cos^2 x) \sin x dx$   
 $= \int \sin x dx - \int \cos^2 x \sin x dx = -\cos x + \frac{1}{3} \cos^3 x + C$

$\int \ln x^2 \cos x dx$   
 $u = \ln x^2 \quad du = \frac{2}{x} dx$   
 $v = \cos x \quad dv = -\sin x$   
 $\int 2 \ln x \cos x dx = 2 \left[ \ln x \sin x + \cos x \right] + C$

$\int \sqrt{1-x} dx$   
 $u = 1-x \quad du = -dx$   
 $\int \sqrt{u} (-du) = -\frac{2}{3} u^{3/2} = -\frac{2}{3} (1-x)^{3/2} + C$   
 $\int \frac{2x}{5} \sqrt{1-x} dx = \frac{2}{5} \int x \sqrt{1-x} dx$   
 $u = 1-x \quad du = -dx \quad x = 1-u$   
 $\frac{2}{5} \int (1-u) \sqrt{u} (-du) = \frac{2}{5} \left[ \int \sqrt{u} du - \int u \sqrt{u} du \right]$   
 $= \frac{2}{5} \left[ \frac{2}{3} u^{3/2} - \frac{2}{5} u^{5/2} \right] = \frac{4}{15} (1-x)^{3/2} - \frac{4}{62.5} (1-x)^{5/2} + C$

$\int x \ln x dx$   
 $u = \ln x \quad du = \frac{1}{x} dx$   
 $v = x \quad dv = dx$   
 $\int x \ln x dx = \frac{1}{2} x^2 \ln x - \frac{1}{4} x^2 + C$

## Integral por partes

$\int \cos x dx = \sin x + C$   
 $\int \sin x dx = -\cos x + C$

$\int x^2 \cos x dx$   
 $u = x^2 \quad du = 2x dx$   
 $v = \cos x \quad dv = -\sin x$   
 $\int x^2 \cos x dx = x^2 \sin x + 2 \int x \sin x dx$   
 $= x^2 \sin x - 2x \cos x + 2 \sin x + C$

TABLE  
 $\int \cos x dx = \sin x + C$   
 $\int \sin x dx = -\cos x + C$

$\int \cos x dx$   
 $u = 2x \quad du = 2 dx$   
 $v = \cos x \quad dv = -\sin x$   
 $\int 4x \cos x dx = 4 \left[ x \sin x + \cos x \right] + C$   
 $= 4x \sin x + 4 \cos x + C$

## Integral de cos y sen