Tarea Segundo Parcial Cálculo Integral

Alumno:_____ **Grupo: 61L**

INTEGRACIÓN TRIGONOMÉTRICA

1) $\int cos^2 2x\, dx$ $\quad R = \frac{1}{2}x + \frac{1}{8}sen\, 4x + C$

2) $\int sen^3 x\, dx$ $\quad R = -\cos x + \frac{cos^3 x}{3} + C$

3) $\int sen^2 x\, cos^3 x\, dx$ $\quad R = \frac{sen^3 x}{3} - \frac{sen^5 x}{5} + C$

4) $\int sen^3x\ cos^3x\,dx$

$Si \quad u = senx \qquad R = \dfrac{\boldsymbol{sen^4x}}{\boldsymbol{4}} - \dfrac{\boldsymbol{sen^6x}}{\boldsymbol{6}} + \boldsymbol{C}$

$Si \quad u = cosx \qquad R = -\dfrac{\boldsymbol{cos^4x}}{\boldsymbol{4}} + \dfrac{\boldsymbol{cos^6x}}{\boldsymbol{6}} + \boldsymbol{C}$

5) $\int sen^4x\,dx$

$R = \dfrac{3}{8}\boldsymbol{x} - \dfrac{\boldsymbol{1}}{\boldsymbol{4}}\boldsymbol{sen\ 2x} + \dfrac{\boldsymbol{1}}{\boldsymbol{32}}\boldsymbol{sen\ 4x} + \boldsymbol{C}$

6) $\int tan^4 2x\,dx$

$R = \dfrac{\boldsymbol{tan^3 2x}}{\boldsymbol{6}} - \dfrac{\boldsymbol{tan 2x}}{\boldsymbol{2}} + \boldsymbol{x} + \boldsymbol{C}$

7) $\int tan^2x\, sec^4x\, dx$

$$R = \frac{\boldsymbol{tan^5x}}{\boldsymbol{5}} + \frac{\boldsymbol{tan^3x}}{\boldsymbol{3}} + \boldsymbol{C}$$

8) $\int cot^3x\, dx$

$$R = -\frac{\boldsymbol{cot^2x}}{\boldsymbol{2}} - \boldsymbol{ln|sen\, x|} + \boldsymbol{C}$$

9) $\int csc^4x\, cot^2x\, dx$

$$R = -\frac{\boldsymbol{cot^3x}}{\boldsymbol{3}} - \frac{\boldsymbol{cot^5x}}{\boldsymbol{5}} + \boldsymbol{C}$$

INTEGRACIÓN POR SUSTITUCIÓN TRIGONOMÉTRICA

1) $\int \frac{dx}{\sqrt{x^2+121}}$

$$R = \boldsymbol{ln}\left|\frac{\sqrt{\boldsymbol{x^2+121}}+\boldsymbol{x}}{\boldsymbol{11}}\right| + \boldsymbol{C}$$

2) $\int \frac{x\,dx}{\sqrt{64-x^2}}$

$$R = -\sqrt{\boldsymbol{64-x^2}} + \boldsymbol{C}$$

3) $\int \frac{x\,dx}{\sqrt{x^2-100}}$

$R = \sqrt{\boldsymbol{x^2-100}} + \boldsymbol{C}$

4) $\int \frac{dx}{x\sqrt{36-x^2}}$

$R = \frac{1}{6}\boldsymbol{ln}\left|\frac{\boldsymbol{6-\sqrt{36-x^2}}}{\boldsymbol{x}}\right| + \boldsymbol{C}$

INTEGRACIÓN POR FRACCIONES PARCIALES

1) $\int \frac{dx}{x^2-4}$ $\qquad R = -\frac{1}{4}\boldsymbol{ln(x+2)} + \frac{\mathbf{1}}{\mathbf{4}}\boldsymbol{ln(x-2)} + \boldsymbol{C}$

2) $\int \frac{5x-1}{x^2-1}dx$ $\qquad R = \mathbf{3}\boldsymbol{ln(x+1)} + \mathbf{2}\boldsymbol{ln(x-1)} + \boldsymbol{C}$

3) $\int \frac{4x-2}{x^3-x^2-2x}dx$ $\qquad R = \boldsymbol{ln(x)} + \boldsymbol{ln(x-2)} - \mathbf{2}\boldsymbol{ln(x+1)} + \boldsymbol{C}$