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Nombre del trabajo: Reporte

Materia: Matemática Aplicada

Grado: 6

Grupo: A

Comitán de Domínguez Chiapas.

$$\int \cos^2 3x dx = \int \cos^2 x = \frac{1}{2} (1 + \cos 2x) \rightarrow \text{formula}$$

$$\int \frac{1}{2} (1 + \cos 6x) dx$$

$$\int (\frac{1}{2} + \frac{1}{2} \cos 6x) dx = \frac{1}{2} \int dx + \frac{1}{2} \int \cos 6x dx$$

$$\frac{x}{2} + \frac{1}{2} \cdot \frac{1}{6} \text{sen } 6x + C$$

$$\frac{x}{2} + \frac{1}{12} \text{sen } 6x + C \quad (2)$$

$$\int \text{sen}^2 x + \cos^2 x dx = \text{sen}^2 x + \cos^2 x = 1$$

$$\int 1 dx = x + C \quad (3)$$

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$$\int \text{sen } 5x \cos 2x dx$$

$$\frac{1}{2} [\cos(x-y) + \text{sen}(x+y)]$$

$$\int \text{sen } 2x \cos 2x dx$$

$$\int \frac{1}{2} [\text{sen } (3x) + \text{sen } (x)] dx \quad (4)$$

$$-\frac{1}{2} \int \text{sen } 3x dx + \frac{1}{2} \int \text{sen } x dx$$

$$= \frac{1}{6} \cos 3x - \frac{1}{4} \cos x + C$$

$$\text{sen } \frac{x}{4} \text{sen } \frac{x}{3} dx$$

$$\frac{1}{2} (\cos(x-y) - \cos(x+y))$$

$$\frac{1}{2} \int \cos(\frac{x}{4} - \frac{x}{3}) dx - \frac{1}{2} \int \cos(\frac{x}{4} + \frac{x}{3}) dx \quad (5)$$

$$\frac{1}{2} \int \cos(\frac{3x}{12} - \frac{4x}{12}) dx - \frac{1}{2} \int \cos(\frac{3x}{12} + \frac{4x}{12}) dx$$

$$-\frac{1}{2} (\frac{12}{1}) \text{sen}(\frac{-x}{12} + \frac{1}{2} (\frac{12}{2}))$$

$$\text{sen } \frac{2x}{12} + C$$

$$6 \text{sen}(\frac{x}{6}) + \frac{12}{12} \text{sen}$$

$$\frac{2x}{12} + C$$

$$\int \frac{\sin x}{x} \sin \frac{x}{3} dx$$

$$y = \frac{1}{3}x \Rightarrow x = 3y$$

$$dx = 3 dy$$

$$\int \frac{\sin 3y}{3y} \sin y \cdot 3 dy$$

$$= \int \frac{\sin 3y}{y} \sin y dy$$

$$\int \frac{1}{2} \left[\sin \left(\frac{2x}{6} \right) - \cos \left(\frac{2x}{6} \right) \right] dx$$

$$\frac{1}{2} \int \sin \left(\frac{x}{3} \right) dx - \frac{1}{2} \int \cos \frac{x}{3} dx$$

$$-\frac{3}{2} \cos \left(\frac{x}{3} \right) - \frac{3}{2} \sin \frac{5x}{3} + C$$

(6)