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Materia: Matematica Aplicada

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Grupo: A

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2

$$\int \text{SEN } 3x \ \text{SEN } 2x \, dx = \int \tfrac{1}{2} \left[\cos(3x-2x) - \cos(3x+2x)\right] dx$$

$$= \tfrac{1}{2} \int \cos x \, dx - \tfrac{1}{2} \int \cos 5x \, dx = \tfrac{1}{2} \text{SEN } x - \tfrac{1}{2} \cdot \tfrac{1}{5} \text{SEN } 5x + c$$

$$\boxed{\tfrac{1}{2} \text{SEN } x - \tfrac{1}{10} \text{SEN } 5x + c}$$

3

$$\int \text{SEN } 3x \ \cos 5x \, dx = \int \tfrac{1}{2} \left[\text{SEN}(3x-5x) + \text{SEN}(3x+5x)\right] dx$$

$$\tfrac{1}{2} \int \text{SEN}(-2x) \, dx + \tfrac{1}{2} \int \text{SEN } 8x \, dx \tfrac{1}{2} \cdot \tfrac{1}{2} \cos(-2x) +$$

$$\tfrac{1}{2} \tfrac{1}{8} (\cos 8x) + c =$$

$$\boxed{\tfrac{1}{4} \cos(-2x) \ \tfrac{1}{16} \cos = 8x + c}$$

4

$$\int \cos 4x \ \cos 2x \, dx = \tfrac{1}{2} \int \left[\cos(4x-2x) + \cos(4x+2x)\right] dx$$

$$= \tfrac{1}{2} \int \cos 2x \, dx + \tfrac{1}{2} \int \cos 6x \, dx = \tfrac{1}{2} \cdot \tfrac{1}{2} \text{SEN } 2x + \tfrac{1}{2} \cdot \tfrac{1}{6} \text{SEN } 6x + c.$$

$$= \boxed{\tfrac{1}{4} \text{SEN } 2x + \tfrac{1}{12} \text{SEN } 6x + c}$$

5

$$\int \sqrt{1-\cos x} \, dx = \int \sqrt{\text{SEN}^2 \tfrac{1}{x}} \, dx = 2 \int \sqrt{\text{SEN}^2 \tfrac{1}{x}} \, dx =$$

$$= 2 \text{SEN } \tfrac{1}{x} \, dx = \boxed{-2x \cos \tfrac{1}{x} + c.}$$