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Grado: 6

Materia: Matemática aplicada

Nombre del trabajo: INTEGRALES 2

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$$1.- \int \sin 8x \, dx$$

$$v = 8x \quad dv = 8$$

$$\frac{1}{8} \int \sin 8x \, dx$$

$$-\frac{1}{8} \cos 8x + C$$

$$2.- \int \cos 2x^2 \, dx$$

$$v = 2x^2 \quad dv = 4x$$

$$\frac{d(x^n)}{dx} = nx^{n-1}$$

$$\frac{1}{4} \int x \cos 2x^2 \, dx$$

$$\frac{1}{4} \sin 2x^2 + C$$

$$3.- \int \frac{\tan \sqrt{x}}{\sqrt{x}} \, dx$$

$$v = \sqrt{x} \quad dv$$

$$\frac{d(\sqrt{x})}{dx} = \frac{d(x^{1/2})}{dx} = \frac{2 \int \frac{\tan \sqrt{x}}{\sqrt{x}}}{\sqrt{x}}$$

$$x^{n-1}$$

$$\frac{1}{2} x^{1/2-1} = \frac{1}{2} x^{-1/2} = \frac{1}{2\sqrt{x}} = \frac{2 \int \frac{\tan \sqrt{x}}{\sqrt{x}}}{\sqrt{x}}$$

$$-2 \ln |\cos \sqrt{x}| + C$$

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$$4. \int x^2 \cot 3x^3 dx = \int 3x^3 dv = 9x^2 \frac{1}{9} \ln |\sin 3x^3| + C$$

$$5. \int 4x \sin 2x^2 dx = \int 2x^2 dv = 4x - \frac{1}{4} \cos 2x^2 + C$$

$$6. \int \tan 2x dx = \int 2x dv = 2 - \frac{1}{2} \ln |\cos 2x| + C$$

$$7. \int 3x^2 \tan x^2 dx = \int x^3 dv = 3x^2 - \frac{1}{3} \ln |\cos x^3| + C$$

$$8. \int 10x \sec 10x^2 dx = \int 10x^2 dv = 10x \frac{1}{10} \ln |\sec 10x^2| + \tan 10x^2 + C$$

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