MATEMATICAS GENERALES I. 2ª RELACION

1. Resolver las siguientes integrales:

$$\int e^{2-x}\,dx \quad \int \frac{x}{\sqrt{1-x^2}}\,dx \quad \int \cos\left(\tfrac{2}{3}x\right)\,dx \quad \int \frac{dx}{x^2+c^2} \quad \int_{-\pi/4}^{\pi/4} \frac{\sin x}{\cos^2 x}\,dx$$

$$\int x\log(x+1)\,dx \quad \int \log 2x\,dx \quad \int \frac{dx}{5^x} \quad \int_{\pi/6}^{\pi/3} \frac{dx}{\sin x} \quad \int \sin \pi x\,dx$$

$$\int_{-\pi/4}^{\pi/4} \frac{dx}{\cos^2 x} \quad \int \frac{dx}{\cos^2(1-x)} \quad \int \frac{e^{\sqrt{x}}}{\sqrt{x}}\,dx \quad \int x5^x\,dx \quad \int_0^1 \frac{x^3}{1+x^4}\,dx$$

$$\int_0^1 \frac{\tan \pi x}{\cos \pi x}\,dx \quad \int_{\pi/6}^{\pi/3} \cot x\,dx \quad \int e^{-x}\sin 2x\,dx \quad \int \frac{x^3}{\sqrt{1-x^4}}\,dx \quad \int_0^1 \frac{x}{\sqrt{1-x^4}}\,dx$$

$$\int x\arcsin(2x^2)\,dx \quad \int \frac{x}{(x+a)^2+b^2}\,dx \quad \int \frac{1+\cos(2x)}{\sin^2 2x}\,dx \quad \int \frac{\sec^2 x}{\sqrt{3\tan x+1}}\,dx$$

$$\int \frac{e^x}{e^x-1}\,dx \quad \int \frac{x}{x^2+1}\,dx$$

2. Resolver las integrales:

$$\int \frac{7}{(x-2)(x+5)}\,dx \quad \int \frac{x}{(x+1)(x+2)(x+3)}\,dx \quad \int \frac{x^2+1}{x(x^2-1)}\,dx \quad \int \frac{2x^2+3}{x^2(x-1)}\,dx$$

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

$$\int \frac{x^2}{(x-1)^2(x+1)}\,dx \quad \int \frac{x^3+4x^2-4x-1}{(x^2+1)^2}\,dx \quad \int \frac{2x-1}{(x+1)^2(x-2)^2}\,dx \quad \int \frac{dx}{x^4-16}$$

$$\int \frac{x}{x^3-1}\,dx \quad \int \frac{dx}{x^2+16} \quad \int \frac{dx}{(x^2+16)^2} \quad \int \frac{dx}{x^2+2x+2}$$

3. Resolver las integrales:

$$\int \sin^3 x\,dx \quad \int \cos^4 x \sin^3 x\,dx \quad \int_0^{\pi} \sin^4 x\,dx \quad \int \sin 2x\cos 3x\,dx$$

$$\int_0^{\pi/4} \cos^4 x\,dx \quad \int \sin^3 x\cos^2 x\,dx \quad \int \sin^3 x\cos^3 x\,dx \quad \int \cos 2x\cos 3x\,dx$$

$$\int \sin^5 x\cos^2 x\,dx \quad \int \sin^3 3x\,dx$$

4. Resolver las integrales:

$$\int \tan^3 x\ dx \quad \int \tan^2(x+1)\ dx \quad \int \sec^2(x+1)x\ dx \quad \int \cot^3 x\ dx$$

$$\int \tan^2 x \sec^2 x\ dx \quad \int \cot^5 x\ dx \quad \int \tan^4 x \sec^4 x\ dx \quad \int \sec^4 4x\ dx$$

$$\int \tan^5 3x\ dx \quad \int \cot^2 x \sec x\ dx$$

5. Resolver las integrales:

$$\int \frac{dx}{\sqrt{1-x^2}} \quad \int \frac{dx}{(x^2+2)^{\frac{3}{2}}} \quad \int \frac{dx}{(5-x^2)^{\frac{3}{2}}} \quad \int \frac{x}{\sqrt{x^2-4}}\ dx \quad \int_1^2 \sqrt{x^2-1}\ dx$$

$$\int \frac{x}{\sqrt{4-x^2}}\ dx \quad \int \frac{x^2}{\sqrt{x^2-4}}\ dx \quad \int \frac{x^2}{\sqrt{4-x^2}}\ dx \quad \int \frac{x^2}{\sqrt{4+x^2}}\ dx \quad \int \frac{x}{a^2+x^2}\ dx$$

$$\int x\sqrt{4+x^2}\ dx \quad \int \frac{x}{\sqrt{4-x^2}}\ dx \quad \int \frac{e^x}{\sqrt{9-e^{2x}}}\ dx \quad \int \frac{x^2}{(x^2+8)^{\frac{3}{2}}}\ dx \quad \int \frac{\sqrt{1-x^2}}{x^4}\ dx$$

$$\int \frac{\sqrt{x^2-1}}{x}\ dx \quad \int \frac{dx}{\sqrt{x^2+a^2}} \quad \int \frac{dx}{\sqrt{x^2-a^2}} \quad \int \sqrt{a^2-x^2}\ dx \quad \int \sqrt{x^2-a^2}\ dx$$

$$\int \frac{dx}{x\sqrt{a^2-x^2}}\ dx \quad \int \frac{dx}{x^2\sqrt{a^2+x^2}}\ dx \quad \int \frac{dx}{x^2\sqrt{a^2-x^2}}\ dx \quad \int \frac{dx}{x^2\sqrt{x^2-a^2}}\ dx$$

$$\int \frac{dx}{x\sqrt{a^2+x^2}}\ dx \quad \int \frac{dx}{x\sqrt{x^2-a^2}}\ dx$$

6. Resolver las integrales:

$$\int \frac{dx}{1+\cos x} \quad \int \frac{dx}{1-\sin x} \quad \int \frac{dx}{1-\cos x} \quad \int_0^{\frac{\pi}{2}} \frac{dx}{3+2\cos x} \quad \int_0^{\frac{\pi}{2}} \frac{dx}{3+\cos x}$$

$$\int \frac{\sin x}{2-\sin x}\ dx \quad \int \frac{dx}{5+4\cos x} \quad \int \frac{dx}{1+\tan x} \quad \int \frac{dx}{5\sec x-3} \quad \int \frac{\cos x}{1-\cos x}\ dx$$

$$\int \frac{1-\cos x}{1+\cos x}\ dx \quad \int \frac{1+\sin x}{1+\cos x}\ dx$$

7. Resolver las integrales:

$$\int \frac{dx}{1+\sqrt{x}} \quad \int_0^3 x\sqrt{1+x}\ dx \quad \int \frac{\sqrt{x}}{1+x}\ dx \quad \int \frac{dx}{x(x^{\frac{1}{3}}-1)} \quad \int \sqrt{1+e^x}\ dx$$

$$\int x(1+x)^{\frac{1}{3}}\ dx \quad \int_2^3 \frac{x^3}{(1+x^2)^3}\ dx \quad \int x\sqrt{x+1}\,dx \quad \int \frac{\sqrt{x}}{\sqrt{x}-1}\ dx \quad \int \frac{x}{\sqrt{x+1}}\ dx$$

$$\int \frac{\sqrt{x-1}+1}{\sqrt{x-1}-1}\ dx \quad \int \frac{1-e^x}{1+e^x}\ dx \quad \int \frac{dx}{\sqrt{1+e^x}} \quad \int \frac{x+1}{x\sqrt{x-2}}\ dx \quad \int x^2\sqrt{x-1}\ dx$$