Encontrar $\int \sin^3 x \; dx$.

$$I \;=\; \int \sin^3 x \; dx \;=\; \int (\sin x)(1-\cos^2 x)x \; dx \;=\; -(\cos x)(1-\cos^2 x) + 2\int (\cos^2 x)(\sin x) \; dx \;=$$
$$=\; -\cos x + \cos^3 x + 2\int (1-\sin^2 x)(\sin x) \; dx \;=\; -\cos x + \cos^3 x + 2\int \sin x \; dx - 2\underbrace{\int \sin^3 x \; dx}_{I}$$

$$\boxed{\int \sin^3 x \; dx \;=\; \frac{\cos^3 x}{3} - \cos x + c}$$

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