

$$\int \sin^3 x \cos x \, dx$$

$$\int \sin^3 x \cos x \, dx = \int \sin^3 x \, d\sin x = \int [t = \sin x] = t^3 \, dt = t^4/4 + C = [\sin x = t] = \sin^4 x/4 + C$$

$$d\sin x = \cos x \, dx$$