

$$\int (\sin(x))^n (\cos(x))^m dx, \quad n \text{ and } m \text{ integers} \\ (\text{POS, neg, or zero})$$

I. If m is odd, let $u = \sin(x)$

II. If n is odd, let $u = \cos(x)$

III. If m and n are both even, use the identities

$$\sin^2(x) = \frac{1}{2}(1 - \cos(2x))$$

$$\cos^2(x) = \frac{1}{2}(1 + \cos(2x))$$

$$\text{Note: } \sin^2(0) = 0 = \frac{1}{2}(1-1)$$

$$\cos^2(0) = 1 = \frac{1}{2}(1+1)$$