

## Calculus II

# Integrals of the form $\int \sin^n x \cos^m x dx$ , theory

Todor Milev

2019

$$\int \sin^m x \cos^n x dx$$

When  $n$  – odd:

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When  $m$  – odd:

$$\int \sin^m x \cos^n x dx = \int \sin^m x \cos^{n-1} x d(\sin x)$$

When  $n$  – odd:  
 $\cos x dx$   
 $= d(\sin x)$

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If both  $m, n$  – even, use  $\left| \begin{array}{l} \sin^2 x = \frac{1 - \cos(2x)}{2} \\ \cos^2 x = \frac{\cos(2x) + 1}{2} \end{array} \right|$  and substitute  $s = 2x$  to lower trig powers. Repeat above considerations.

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