

Math 141 Homework #13
Due Tuesday, 11/20/07
Extra Problems

Problem #1 Let $n = 2m + 1$ be a positive *odd* integer (that is, you can write $n = 2m + 1$, where m is a nonnegative integer). Find a general formula for

$$\int \cos^n x \, dx.$$

Your answer should be a function of x in which m appears as a parameter. (Hint: Use the binomial theorem and summation notation.)

Bonus Problem Read the Wikipedia article on tabular integration at

http://en.wikipedia.org/wiki/Integration_by_parts#Tabular_integration_by_parts

and write a clear and correct explanation of how and why it works.