

Math 16B  
Kouba  
Handout 4

- 1.) Verify that  $\frac{1}{2} \sin 2x + 30$  is an antiderivative of  $\cos 2x$ .
- 2.) Verify that  $\frac{1}{8} \tan 8x + 4 \sec 5x - 3$  is an antiderivative of  $\sec^2 8x + 20 \sec 5x \tan 5x$ .
- 3.) Evaluate  $\int \sin 9x \, dx$  and check your result by differentiation.
- 4.) Give a general formula for  $\int \sin kx \, dx$ , where  $k$  is a constant.
- 5.) Verify that  $e^x \cos x$  is an antiderivative for  $e^x \cos x - e^x \sin x$ .
- 6.) Find an antiderivative for  $x^2 \cos x + 2x \sin x$ .