

# Review Problems

February 8, 2017

1. (Fall 2002, Exam 1, #12) Evaluate  $\int_0^{\pi/4} x \sin(2x) dx$ .
2. (Fall 2002, Exam 2, #1) Evaluate  $\int \cos^5 x \sin^4 x dx$ .
3. (Fall 2004, Exam 1, #9) Evaluate  $\int_0^{\pi/3} \sec^4 x dx$ .
4. (Fall 2006, Exam 1, #10) The integral  $\int_1^2 x^{-2} \ln x dx$  is equal to what?
5. (Fall 2006, Exam 1, #11) The integral  $\int_0^{\pi/4} x \sin x dx$  is equal to what?
6. (Fall 2006, Exam 1, #12) The integral  $\int_0^{\pi/4} \tan^3 x \sec^2 x dx$  is equal to what?
7. (Fall 2006, Exam 1, #13) If  $\int_0^1 x^2 e^x dx = A$ , then  $\int_0^1 x^3 e^x dx$  is equal to what (in terms of A)?
8. (Fall 2007, Exam 2, #1)  $\int_0^{\pi/2} \sin^3 x dx =$