

HW04 PHYS4112 Assigned: THU 17 SEP 09, Due: THU 24 SEP 09

1. Use speed integration by parts to evaluate these integrals and check your answer with Mathematica or at <http://integrals.wolfram.com/>.

Don't forget the *three stopping rules* and show your work!

a. $\int_0^{\pi} x^2 \cos x \, dx$ b. $\int_0^{\infty} e^{-x} \sin x \, dx$ c. $\int_0^{\pi} \sin(3x) \cos(2x) \, dx$ d. $\int \frac{\ln x}{x^2} \, dx$

2. Boas problem 11.3.1, page 539.

3. Boas problems 11.3.2, 11.3.4, and 11.3.6, page 540.

4. Boas problem 11.3.12 and 11.3.13, page 540.

5. Boas problem 11.3.16, page 540. (Hint: See Ch.9.5.)

6. Boas problem 11.3.17, page 540.



Leonhard Euler