HW08 PHYS4112 Assigned: THU 22 OCT 09, Due: THU 29 OCT 09


2. Boas problem 12.2.3, page 567. Then change the variable $x$ into cosine of theta and plot them again as a function of theta. (Hint: Do problem 4, below, first.)


5. Boas problem 12.4.4, page 569. Then find a formula for the answer for the case $m = \ell$. (Hints: Use speed integration by parts. The answer for the case $m = \ell$ is not zero. Use speed integration by parts to generate one formula for the case $m = \ell$ is even versus another formula for $m = \ell$ is odd. Then check the formulas by directly integrating the definite integral in Mathematica for $m = \ell = 0, 1, 2, 3, 4, 5$ and comparing the results.

6. Boas problems 12.5.3 & 12.5.4, pages 573–574.

[Image of Adrien-Marie Legendre]