

Homework 4, due 2-7

1. Problem V.8 in Peebles.

2. Consider the function

$$f(r) = \frac{1}{r_0^3 + r^3}$$

with $r_0 > 0$ (we were interested in the limit $r_0 \rightarrow 0$). This is a regularized version of the function $1/r^3$. Repeat the steps leading from equ. (34.30) to (34.36) for this particular choice of $f(r)$. Explain why it is legitimate to replace $\psi(r)$ by $\psi(0)$ in equ. (34.27).