

Phys 402
Spring 2019
Homework 6
Due Friday, March 29, 2019 @ 9 AM

1. Griffiths, 2nd Edition, Problem 5.11 or Griffiths, 3rd Edition, Problem 5.15
[first-order perturbation theory applied to He ground state energy level: see effect of Coulomb repulsion between electrons]
2. Griffiths, 2nd Edition, Problem 5.12 or Griffiths, 3rd Edition, Problem 5.17
[ground states of atoms]
3. Griffiths, 2nd Edition, Problem 5.15 or Griffiths, 3rd Edition, Problem 5.20
[Fermi energy]
4. Griffiths, 2nd Edition, Problem 5.17 or Griffiths, 3rd Edition, Problem 5.23
[Bulk modulus]
5. Griffiths, 2nd Edition, Problem 5.32 or Griffiths, 3rd Edition, Problem 5.7 ((a) and (b) only in 3rd edition problem, no need to make plot)
[exchange force, identical particles in oscillator]
6. Griffiths, 2nd Edition, Problem 5.33 or Griffiths, 3rd Edition, Problem 5.29
[identical particles]
7. Griffiths, 2nd Edition, Problem 5.34 or Griffiths, 3rd Edition, Problem 5.30
[Fermi energy for non-interacting electrons in 2D well]

Extra Credit

- Griffiths, 2nd Edition, Problem 5.36 or Griffiths, 3rd Edition, Problem 5.36
[Degeneracy pressure in neutron stars]