HOMEWORK 2

Physics 752
Many body problems in solid state physics
Fall, 2002

1,2. Problems 1 and 2, Landau. Statistical physics, v.2, \$87.

3. Problem 1, Landau. Statistical physics, v.1, \$126.

4. Express the NMR relaxation rate $1/T_1$ and neutron scattering cross section in terms of the dynamical spin susceptibility (see e.g., Fong et al, Phys. Rev. B **54**, 6708 (1996); A. J. Millis, H. Monien, and D. Pines, Phys. Rev. B **42**, 167 (1990).)

5. Find $\rho_s(T)$ (the superfluid density) and $n_s(T)$ (number of particles in the condensate) for a 2D Bose liquid.