

Homework 2, due 9/22/04

4. Consider the following model (Gunn, JE, & Gott JR 1972, ApJ, 176, 1). The universe is critical, $\Omega_0=1$, and at $t=t_1$ there is a small density enhancement, without any velocity perturbation:

$$\rho = (1 + \delta)\rho_c \quad .$$

- a. What is the collapse time of the perturbation?
- b. What is the density enhancement at maximum expansion?