

## Homework 8

(1) Find the Jeans mass for gas with temperature  $T$  and pressure  $P$ . It is convenient to parametrize the pressure as a product of the number-density  $n$  of atoms and temperature  $T$ :  $\tilde{P} = nT$  with the typical value of  $nT = 3000$  in the plain of the disk of our Galaxy. Gas should be assumed neutral mostly hydrogen with helium fraction  $Y = 0.25$  by mass. What is the Jeans mass for  $T = 10^2, 10^3, 10^4 K$ ?