Homework 8 due in class 12/1

While I may have consulted with other students in the class regarding this homework, the solutions presented here are my own work. I understand that to get full credit, I have to show all the steps necessary to arrive at the answer, and unless it is obvious, explain my reasoning using diagrams and/or complete sentences.

Name: [Name]
Signature: [Signature]

1. (15 points) Binney & Tremaine 1.2
2. (15 points) Binney & Tremaine 1.3
3. (25 points) Binney & Tremaine 2.1
4. (15 points) Prove that it is impossible to have a spherical distribution of matter in which the mass density is everywhere a constant times the gravitational potential, unless that constant is zero.
5. (15 points) Binney & Tremaine 2.8
6. (15 points) Derive the axisymmetric surface density (2.68b) from the gravitational potential (2.68a) using Gauss's law.