

ASTRO 381: HOMEWORK 1

Assigned on Tu Feb. 9, 2010. Due in class on Tu Feb. 23, 2010

GD refers to the **first edition (1987; Princeton University Press)** of the textbook "Galactic Dynamics" by J. Binney & S. Tremaine. The number of points for each question is indicated in brackets.

1. Using the definition of the gravitational force \mathbf{F} and gravitational potential Φ given in class, show that $\mathbf{F} = -\nabla\Phi$ [**10 pts**]
2. GD, problem 2-3 [**15 pts**]
3. GD, problem 2-6 [**15 pts**]
4. GD, problem 2-10 [**20 pts**]
5. GD, problem 2-12 [**20 pts**]
6. GD, problem 2-13 [**20 pts**]