

PHYS 101

Homework # 11

DUE DATE: December 23, 2008

Please do not submit copycat answers from the solutions book or some other solution you have in hand. You should at least show your understanding of the problem. Otherwise, this will be considered as cheating.

- 1) A planet has a core of radius R and mass M , surrounded by an outer shell of inner radius R and outer radius $2R$ and mass $4M$. What is the gravitational acceleration of a particle at points (a) R , (b) $2R$, (c) $3R$ from the center of the planet.
- 2) Three identical stars of mass M form an equilateral triangle (of edge length L) that rotates around the triangle's center as the stars move in a common circle about that center. What is the speed of the stars?
- 3) Problem 12-66 in the text. Chapter 12.
- 4) Problem 12-69 in the text. Chapter 12.
- 5) Problem 12-73 in the text. Chapter 12.
- 6) Discussion Question Q12.19 in the text. Chapter 12.
- 7) Discussion Question Q12.13 in the text. Chapter 12.