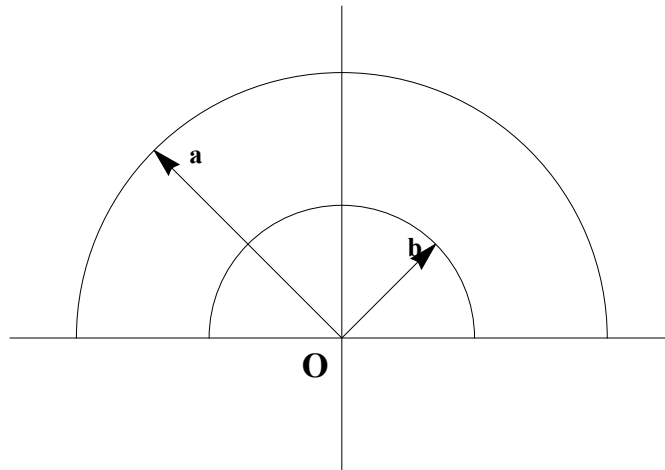# PHYS 314
HOMEWORK #7

Due : 31 March 2017

1. Consider the problem, done in class and in the text, of finding the gravitational force due to a spherical shell at points exterior to the shell, interior to the shell, and in the shell. In each case, derive the limits for the dr integral and verify that the text is using the correct values. Verify the integration resulting in eq. 5.21

2. Verify eqs. 5.22 in the text.

3. A uniform plate has its boundary consisting of two concentric half circles of radii a and b as shown below. Find the force of attraction on a test mass located at the origin (at point O).

4. Find the force of attraction of a thin uniform rod of length 2 a on a particle of mass m placed at a distance b from its midpoint.