

## 1 Toward the Moon

In this problem assume that there is no atmospheric friction, and use a static model for the earth and moon system. So this will be a pretty gross approximation. Use: the mass of the earth is  $M_E$ , the mass of the moon is  $M_m$ , and the orbit radius of the earth moon system as measured from earths center to the moons center is  $R_o$ .

### 1.1

Find the distance from the earths center toward the moon,  $R_b$ , where the force of gravity from the earth and the force of gravity from the moon on a small object balance (add to zero).