

18. (a) The gravitational acceleration is

$$a_g = \frac{GM}{R^2} = 7.6 \text{ m/s}^2 .$$

- (b) Note that the total mass is $5M$. Thus,

$$a_g = \frac{G(5M)}{(3R)^2} = 4.2 \text{ m/s}^2 .$$