

46. $r = 700\,000\text{ m} + 6.37 \times 10^6\text{ m}$

$$2V_{co} = ?$$

$$V_{co} = \sqrt{\frac{GM}{r}}$$

$$= \sqrt{\frac{G(5.98 \times 10^{24})}{7.07 \times 10^6}}$$

$$V_{co} = 7511\text{ m/s}$$

$$2V_{co} = 15\,022\text{ m/s}$$

44. $T = ?$ (lunar months)

$$r = \frac{1}{2} r_m$$

$$\frac{T^2}{r^3} = \frac{4\pi^2}{GM} = \frac{T^2}{r^3}$$

$$\frac{1^2}{r^3} = \frac{T^2}{(0.5r)^3} \quad \frac{1}{1} = \frac{T^2}{0.125}$$

$$(0.354 \text{ em} = T)$$