

$$P = 2\pi \sqrt{\frac{M_R l^2/3 + M_B l^2}{g(M_B + M_R) \left( \frac{M_R l/2 + M_B l}{M_B + M_R} \right)}}$$

$$= 2\pi \sqrt{\frac{M_R l/3 + M_B l}{g(M_R/2 + M_B)}}$$

$$\text{If } M_R = 0 \quad P = 2\pi \sqrt{l/g}$$

$$\text{If } M_B = 0 \quad P = 2\pi \sqrt{\frac{2l}{3g}}$$

d) n oscillations in 24 hrs = 86400s  
increases to n oscillations in 86401s.

$$\therefore P_1 = \frac{86400}{n} = 2\pi \sqrt{\frac{l}{g}} \quad (1)$$

$$P_2 = \frac{86401}{n} = 2\pi \sqrt{\frac{l(1+\alpha T)}{g}} \quad (2)$$

$$(2) \div (1) \quad \frac{86401}{86400} = \sqrt{\frac{1+\alpha T}{1}}$$