

Answers to assignment 11

15.29

$$T = 2\pi\sqrt{\frac{l}{g}},$$

$$\text{so } l = \left(\frac{T}{2\pi}\right)^2 g = \left(\frac{0.5}{2\pi}\right)^2 9.8 = 0.062\text{m} = 6.2\text{cm}.$$

16.19

$$\beta(\text{dB}) = 10\log\frac{I}{I_0}, I_0 = 10^{-12}\text{W/m}^2.$$

$$\text{Then } I = I_0 10^{\frac{\beta}{10}} = 10^{-12} \times 10^{-8/10} = 1.58 \times 10^{-13}\text{W/m}^2.$$