79. (a) With $r = 10$ m in Eq. 18-28, we have

$$I = \frac{P}{4\pi r^2} \quad \Longrightarrow \quad P = 10\,\text{W} \ .$$

(b) Using that value of P in Eq. 18-28 with a new value for r, we obtain

$$I = \frac{P}{4\pi(5.0)^2} = 0.032\ \frac{\text{W}}{\text{m}^2}.$$

Alternatively, a ratio $I'/I = (r/r')^2$ could have been used.

(c) Using Eq. 18-29 with $I = 0.0080$ W/m^2, we have

$$\beta = 10 \log \frac{I}{I_0} = 99\ \text{dB}$$

where $I_0 = 1 \times 10^{-12}$ W/m^2.