

40.4

Part

$$A_1 = 130 \text{ dB} = 133$$

$$A_2 = 80 \text{ dB} = 83$$

Frage

$$\frac{I_1}{I_2} = ?$$

$I_2$

$$A = \log\left(\frac{I}{I_0}\right)$$

$$A_1 = \log\left(\frac{I_1}{I_0}\right), \quad A_2 = \log\left(\frac{I_2}{I_0}\right)$$

$$\log_e v = c \Rightarrow e^c = v$$

$$10^{A_1} = \frac{I_1}{I_0}, \quad I_1 = 10^{A_1} I_0$$

$$10^{A_2} = \frac{I_2}{I_0}, \quad I_2 = 10^{A_2} I_0$$

$$\frac{I_1}{I_2} = \frac{10^{A_1} I_0}{10^{A_2} I_0}$$

$$I_1 = \frac{10^{A_1}}{10^{A_2}}$$

$$\frac{I_1}{I_2} = 10^{A_1 - A_2}$$

$$\frac{I_1}{I_2} = 10^{133 - 83} = 10^5 = 100\,000$$