Problem 1.21

Amplification factors on a voltmeter used to measure the vibration output from an accelerometer are given as 10, 50, and 100. What are the decibel steps?

Solution

An amplification factor of 10 corresponds to a decibel step of

$$20\log_{10}(10) = +20.$$

An amplification factor of 50 corresponds to a decibel step of

$$20\log_{10}(50) \approx +34.$$

An amplification factor of 100 corresponds to a decibel step of

$$20\log_{10}(100) \approx +40.$$