

## Lesson 8 – Answers

Q1 Write the formula to calculate dBs in the following cases.

Voltage – **db = 20 Log Vout / Vin**

Power – **db = 10 Log P out / P in**

Q2 Complete the following decibel table. (Use the correct suffixes)

Input or Reference	Output	+/- Decibels
0.25 V	6 V	<b>27.6 dB</b>
1.2 V	6 mV	<b>44.4 db</b>
dBV	<b>1.78 V</b>	5 dBV
dBμV	171 μV	<b>44.7 dB</b>
12 V	<b>6 V</b>	- 6 dB
22 μV	22 mV	<b>60 dB</b>
<b>31.6 V</b>	100 V	10dB
0.5 V	97 V	<b>45.7 dB</b>
1 V	<b>6.13 V</b>	15.75 dB

Q3 Complete the following decibel table. (Use the correct suffixes)

Input or Reference	Output	+/- Decibels
0.25 W	6 W	<b>13.8 dB</b>
1.2 W	<b>10.2 W</b>	9.3 dB
dBW	12 W	<b>10.7 dB</b>
dBm	171 mW	<b>22.3 dB</b>
12 W	<b>3.79 W</b>	- 5 dB
22 μW	22 mW	<b>30 dB</b>
1 W	<b>3.98 W</b>	6 dB
0.001 W	1 W	<b>30 DB</b>
10 W	<b>20 W</b>	3 dB

Q4 What is a valve and describe how it works?

**The basis of the valve is that electrons flow from the heated cathode to the anode, which are separated and placed in a vacuum chamber. This is a diode. Now, if you can control or vary the flow of electrons between the cathode and anode, you have an amplifier.**

Q5 Why is it necessary to be cautious when handling equipment with valves?

**Valves get very hot during operation and some of the anode voltages on the valve can be very high.**

Q6 What is the gain of a valve if the change in plate voltage is 50 V and the change in grid voltage is 2 V?

**25**