Lab 1 rubric

Overview
- 100 points possible
- Grade basis: Completeness, clarity, and correctness
- Assign partial credit when appropriate.

Problem	Item
1 (a)	Measurements of harmonics are recorded.
	THD calculation is shown, uses correct formula.
2 (a)	Measurements of square wave are recorded: - Spectrum (list of harmonics' amplitudes) - Total RMS
	Measurements of triangle wave are recorded: - Spectrum (lists of harmonics' amplitudes) - Total RMS
	Theoretical spectra of square, triangle waves are recorded. (These were calculated in the pre-lab using Fourier series.)
	Measured (in-lab) and theoretical (pre-lab) spectra are compared and agree.
(b)	Student indicates how to set Fluke knob so that dBm = dBV.
	Calculations supporting this result are shown.
3 (a)	Graph of PSD is shown.
(b)	Unfiltered noise: BW is recorded.
	Unfiltered noise: RMS is calculated from PSD using correct procedure*.
	Unfiltered noise: RMS calculated from PSD is near RMS measured on Fluke.
(c), (d)	LPF noise: RMS is calculated from PSD using correct procedure*.
	LPF noise: RMS calculated from PSD is near RMS measured on Fluke.
	LPF noise with 2x BW: RMS is calculated from PSD using correct procedure*.
	LPF noise with 2x BW: RMS calculated from PSD is near RMS measured on Fluke.
	Student shows that doubling BW increases RMS by factor of sqrt(2).
(e)	BPF noise: PSD is recorded.
	BPF noise: RMS is recorded.
	Results are compared to pre-lab.

(continued…)

Problem	Item	Points
4 (a)	Signal RMS voltages are measured using the appropriate procedure.	4
	Noise RMS is calculated from PSD using correct procedure*.	4
	SNR calculation is shown, uses correct formula.	5
(b)	Observations about the effects of RBW and VBW are recorded.	4