

Name: _____

Date: _____

Partner: _____

Ultrasonic Interference and Diffraction

Your nicely formatted Excel worksheet should be placed in my inbox on \\files (\\files\Inbox\Physics\Pogo\OpticsLab; only one Excel document per group; it should be titled “Ultrasonic-Smith&Jones.xls”), assuming that you and your partner are named Smith and Jones, respectively. Please use .xls format (NOT .xlsx format).

Submit this worksheet along with: 3 printed graphs (x versus $n\lambda$ from week 1, I versus x from week 1, I versus x from week 2), and your V_{pp} versus x data table from week 2.

<i>Week 1: Part 1 Speed of sound, Single source diffraction</i>		
	<i>Value</i>	<i>Uncertainty</i>
frequency (kHz)		
slope of position vs. # of wavelengths graph (cm)		
measured speed of sound (m/s)		
theoretical speed of sound (m/s)		
L (dist from source to bench, cm)		
a from fit (cm)		
Directly measured a (cm)		
<i>Week 2: Two source interference/diffraction</i>		
L (dist from sources to bench, cm)		
a from fit (cm)		
Directly measured a (cm)		
d from fit (cm)		
Directly measured d (cm)		

In space below, comment on your results. How does your measured speed of sound agree with the theoretical value? For the double “slit”, how do your values of a and d compare with their directly measured values? Do you expect agreement here? Does your value of a agree with your value from the single source?