

Name: _____

Date: _____

Partner: _____

Permittivity of Free Space

Your nicely formatted Excel worksheet should be placed in my inbox on \files (it should be titled "Permittivity-Smith&Jones.xls"), assuming that you and your partner are named Smith and Jones, respectively. Use "save as" so that it's not in .xlsx format. "Nicely formatted" means that no cell includes both data (numbers) and formulas at the same time, and **all** cells have accompanying labels with units.

Quantity	units	value	uncertainty
slope of m' vs. $V^{2/3}$ plot	kg/V ^{2/3}	$\times 10^{-6}$	$\times 10^{-6}$
slope of T^2 vs m' plot	s ² /kg		
Spring constant, k	N/m		
Length of plate, L	m		
Width of plate, W	m		
Permittivity of Free Space, ϵ_0	F/m		
Gravitational accel., g	m/s ²		

What is the accepted value of the permittivity of free space?

In the space below, comment on your results. Do your measurements of the permittivity of free space agree with the accepted value? If not, what could be some possible reasons for the discrepancy?