Name:_____ **Date:**_____

Partner:_____

Black Body Radiation

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 "**saved as**" "BlackBody-Smith&Jones.xls"), assuming that you and your partner are named Smith and Jones, respectively. Please "save as" .xls format (NOT .xlsx format). The spreadsheet must include all three plots, all professionally formatted: (P/T^4) vs. T, P versus T^4, and ln(P) versus ln(T).

	units	*Value*	*Uncertainty*
R_{300}	Ω		
Radius r of tungsten filament	*m*		
Cross sectional area A of filament	m^2		
Length L of filament	*m*		
Surface area S of tungsten filament	m^2		
Temperature function T(ρ') *You may leave out units and uncertainties*	$T(\rho') =$		
Slope of P vs T^4 graph	W/K^4		
Value of ε from P vs T^4 graph			
Slope from log plot:			
Intercept from log plot:			
Value of n from log plot	--		
Value of ε from log plot	--		
Accepted emissivity of tungsten (ε)	--		

In the space below, comment on your results. How does your measured *n* agree with the theoretical value? If the measured *n* does not agree with the theoretical *n*, explain a possible cause for the discrepancy. How does your measured emissivity of tungsten agree with the accepted value as listed in the CRC? If they do not agree, explain a possible cause for the discrepancy.