

Problem 1. Using MS Excel, produce a spreadsheet and graph of angle of deviation vs. angle of incidence for a light ray incident on a prism with the following characteristics: $A = 30^\circ$, $n = 1.50$. Determine the angle of incidence which produces the minimum angle of deviation from your data.

Problem 2. An equilateral prism of dense barium crown glass is used in a spectroscope. Its refractive index varies with wavelength, as given in the table below:

$\lambda(\text{nm})$	n
656.3	1.63461
587.6	1.63810
486.1	1.64611

- Determine the minimum angle of deviation for sodium light of 589.3nm
- Determine the dispersive power of the prism
- Determine the Cauchy constants A and B in the long wavelength region (656.3nm) and find the dispersion of the prism at 656.3nm.
- Determine the chromatic resolving power of the prism.
- Determine the minimum base length of the prism if it is to resolve the hydrogen doublet at 656.2716 and 656.2852 nm wavelengths. Is this spectrometer practical?