Assignment #3:

Problem #1: Which Slit Bent the Light Most

Consider you are conducting an experiment with a single slit diffraction experiment apparatus. The values of λ, m & a should be given as input. However, the program should ask for three values of "a" and calculate the respective values of the θ's. The output of the program should print, which one of the slits bent the light more. The valid range for the wavelength should be from 380 nm to 750 nm. Out of this range for wavelength should give an output: "Out of the range. Please enter a valid number."

The wavelength range for different color:

Color	Wavelength (nm)
violet	380–450
blue	450–485
cyan	485–500
green	500–565
yellow	565–590
orange	590–625
red	625–750

Please note the following:

- λ should be in nm (10^{-9})
- d and a's are in μm (10^{-6})

Problem #2

If a diffraction grating produces a third-order bright spot for green light (of wavelength 530 nm) at 65.0° from the central maximum, at what angle will the second-order bright spot be for red light (of wavelength 700 nm)?