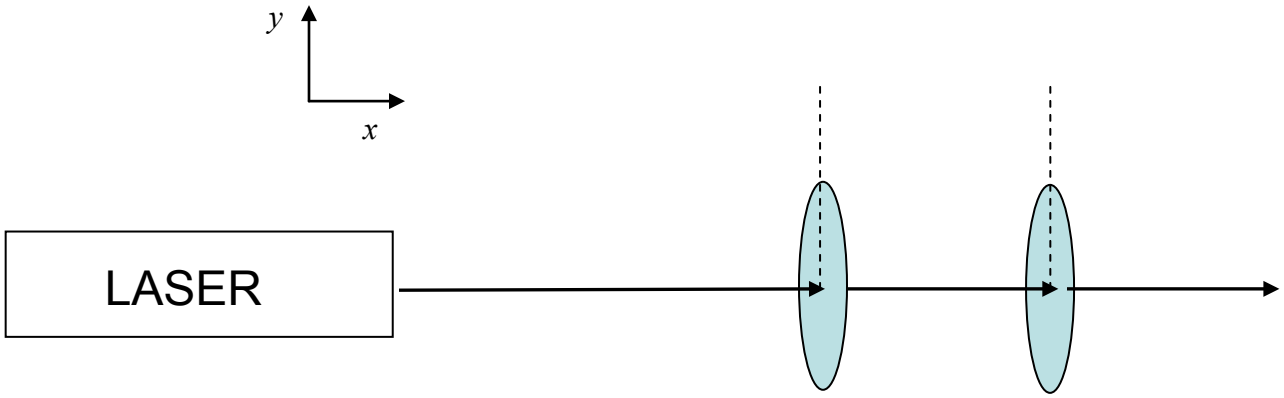
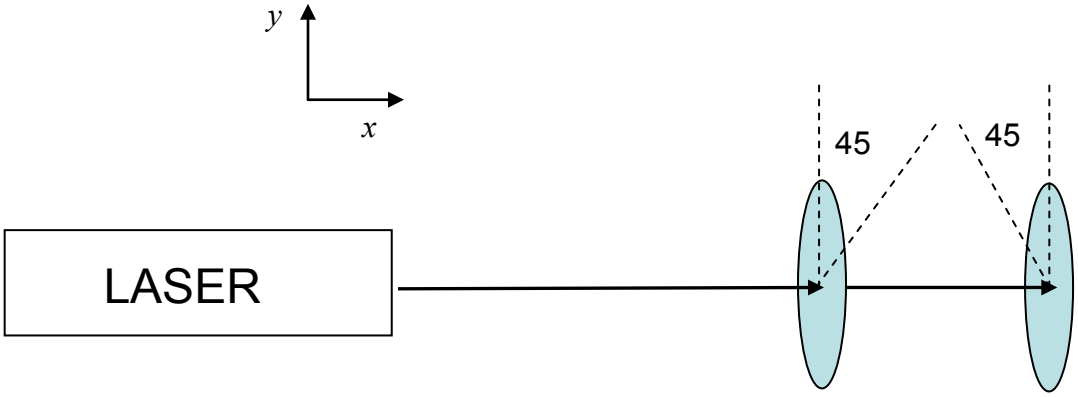
Physics 345 Pre-Lab 8 Polarization

Light from a laser is linearly polarized along the y-axis. Two linear polarizers are arranged so that the light through both polarizers is maximized..



A student then turns off the laser. Then he/she rotates the first polarizer 45° clockwise and the second polarizer 45° counter-clockwise.



Three different students make different predictions as to how much light will come through the polarizers (assume they are ideal).

Student A: The two polarizers are crossed. Therefore, no light will come out.

Student B: The first polarizer will reduce the light intensity by half and the second polarizer will reduce the intensity by another half. Thus, one quarter of the original light intensity will emerge.

Student C: The only way light will emerge is if a third polarizer at zero degrees is placed between the first two.

Which student (or students) if any, has correctly analyzed these physical circumstances? Explain.