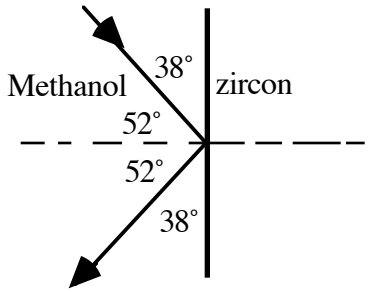
PHYSICS 242 BLOCK 11 DRILL SET, SPRING '17 NAME _____

Slide this drill set under Marteena 308's door any time *before* 7:50 AM Friday, April 7, or give it to me in Marteena 312 *by* 8:00 AM that day. Each problem uses one different equation from the Block 11 Objectives.

1. Methanol is to the left of the vertical boundary. Zircon is to the right. (Find their indices of refraction in Table 33.1, page 1084.) You see the incident and reflected rays. Calculate the angle of refraction (using 38.0° or 52.0°).

Also, add the refracted ray to the drawing, showing the angle that you calculated.

ONE EQUATION USED | SOLUTION | ANSWER



θ__ = __ __.__°

2. For the two materials of Problem 1 *with the incident light in the zircon rather than in the methanol*, at what minimum angle of incidence would you find total internal reflection (if there is such an angle)?

ONE EQUATION USED | SOLUTION | ANSWER

θ____ = __ __.__°

or circle below

no such angle here

3. For the two materials of Problem 1 *with the incident light in the methanol again*, at what angle of incidence would the reflected light be 100% polarized?

ONE EQUATION USED | SOLUTION | ANSWER

θ__ = __ __.__°

4. Note that Table 33.1, page 1084, gives values for light of vacuum wavelength 589 nm. In what substance (listed in that table) is that 589 nm wavelength reduced 433 nm?

ONE EQUATION USED | SOLUTION | ANSWER

5. Use Fig. 33.17, page 1089, to find the speed in silica flint glass of light of vacuum wavelength 420 nm.

ONE EQUATION USED | SOLUTION | ANSWER