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Discussion Section 2
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1. A beam of light is incident at 45° from air into a multi-layer structure with indices (in order) of 1.3, 1.5, and 1.33. Assume parallel surfaces.
 - (a) Does total internal reflection (TIR) occur? If so, at which interface does it happen?
 - (b) If TIR does not occur, at what angle does the ray leave the last interface?

2. An object (2 cm in height) is positioned 5 cm to the left of a positive thin lens with a focal length of 10 cm. Describe the resulting image (i.e. where it images and what the longitudinal and transverse magnifications are) using both the Gaussian and Newtonian equations. Draw appropriate ray diagrams.

3. A lantern slide 8.0 cm high is located 3.50 m from a projection screen. Design a lens to meet the requirement of projecting an image 1.0 m high.