1. Consider a plane wave incident on a thin wedged prism, as shown. The wedge angle is $\alpha \ll 1$ and its index of refraction is $n$.
   (a) Determine the amplitude $U(x, z)$ corresponding to an incident plane wave at small angle $\theta_1$ as shown. Use the paraxial approximation.
   (b) Calculate the complex amplitude transmittance of the prism $t(x, y)$.
   (c) Find the angle at which the transmitted wave propagates.
   (d) Calculate the analogous deflection angle predicted in ray optics.
   (cf. Saleh and Teich, Exercise 2.4-1, page 57.)

2. Saleh and Teich, Exercise 2.4-4, page 60.

3. Saleh and Teich, Problem 2.5-1, page 79.

4. Saleh and Teich, Problem 2.5-3, page 79.

5. Saleh and Teich, Exercise 2.5-3, page 69.