<u>Quiz 27.2B</u>

Light is incident on a 614-nm thick film (n = 1.36) that has been applied to a glass lens (n = 1.44). You may assume that the light is initial in air (n = 1.00) before striking the surface of the film.

We consider two light rays, A and B, that transmit through the film. Ray A passes through the film without reflecting. Ray B reflects twice off the surface of the film before transmitting through, as shown below.

- a) What is the phase shift experienced by ray A, in waves?
- b) What is the phase shift experienced by ray B, in waves?
- c) What wavelengths of light will brightly transmit through the film and into the glass?

Assume visible light ranges from 400 - 700 nm. Answer part c with 3 SF.

