You are flying the TARDIS toward an evil DALEK at a speed of 0.20c. The DALEK attempts to exterminate you by fireing a 724.3nm laser at you. Quickly, on the exterior of the glass (n = 1.5) door facing the DALEK, you have the TARDIS exude a thin layer of a substance with an index of refraction of n=1.7. What is the minimum thickness of this material needed in order to protect you from becoming "exterminated"?

Equations and concepts to know for this chapter:

- You should be able to derive your equations that predict resonance frequencies for various physical situations.
- You should be able to derive the equations needed to predict maximum reflection and maximum transmission for a thin film.
- $f_{beat} = |f_1 - f_2|$