

# Optical and geometrical path lengths

## Questions

1. As light propagates from a rarer medium to a denser medium what happens to its frequency?
2. As light propagates from a rarer medium to a denser medium how does its wavelength change?
3. Does the speed of light change as it passes from one medium to another?
4. Is the geometrical path length more or less than the optical path length?
5. Does a light wave lose its coherence as it passes through a different medium?
6. Is there any discontinuity of the wave ( i.e. the wave function ) at the boundaries of the slab?

### **Note :**

Questions given above may be visualized and solved using the simulations. However, obtaining a mathematical solution is to be always treated as the final answer and obtaining such a mathematical solution implies a deeper understanding and application of the concept.

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