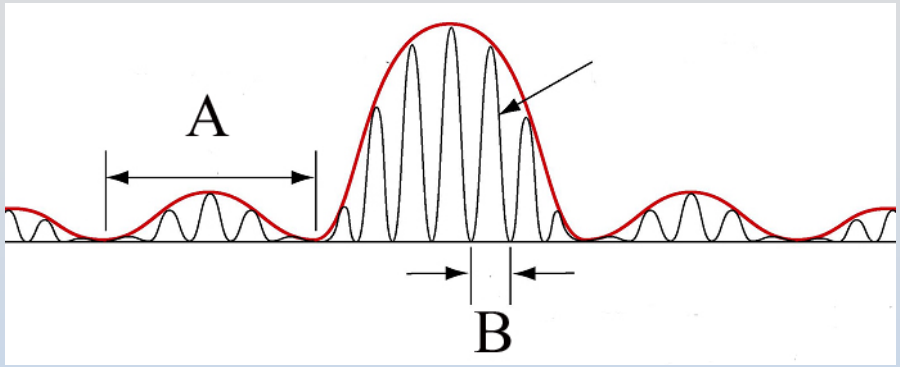
Concept Q.: Headlight Resolution

Is it easier to resolve two headlights at night or during the day?

1. At night
2. During the day
3. It doesn't matter
4. I don't know

Con. Q.: Interference & Diffraction

Coherent monochromatic plane waves impinge on two long narrow apertures (width a) that are separated by a distance d (d >> a).



The resulting pattern on a screen far away is shown above. Which structure in the pattern above is due to the finite width a of the apertures?

1. The distantly-spaced zeroes of the envelope, as indicated by the length A above.
2. The closely-spaced zeroes of the rapidly varying fringes with length B above.
3. I don't know

Concept Question: Changing Colors

You just observed an interference pattern using a red laser. What if instead you had used a blue laser? In that case the interference maxima you just saw would be

1. Closer Together
2. Further Apart
3. I Don't Know.

Concept Question: Lower Limit?

Using diffraction seems to be a useful technique for measuring the size of small objects. Is there a lower limit for the size of objects that can be measured this way?

1. Yes – but if we use blue light we can measure even smaller objects
2. Yes – and if we used blue light we couldn't even measure objects this small
3. Not really
   .
4. I Don't Know

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