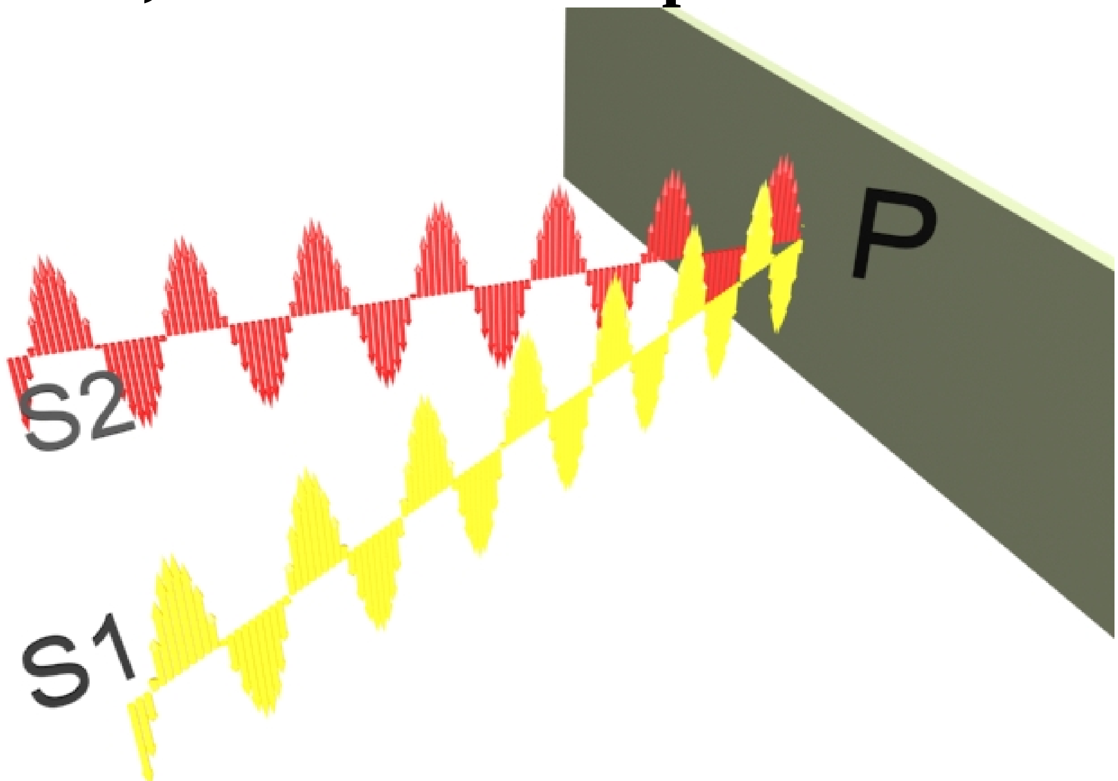
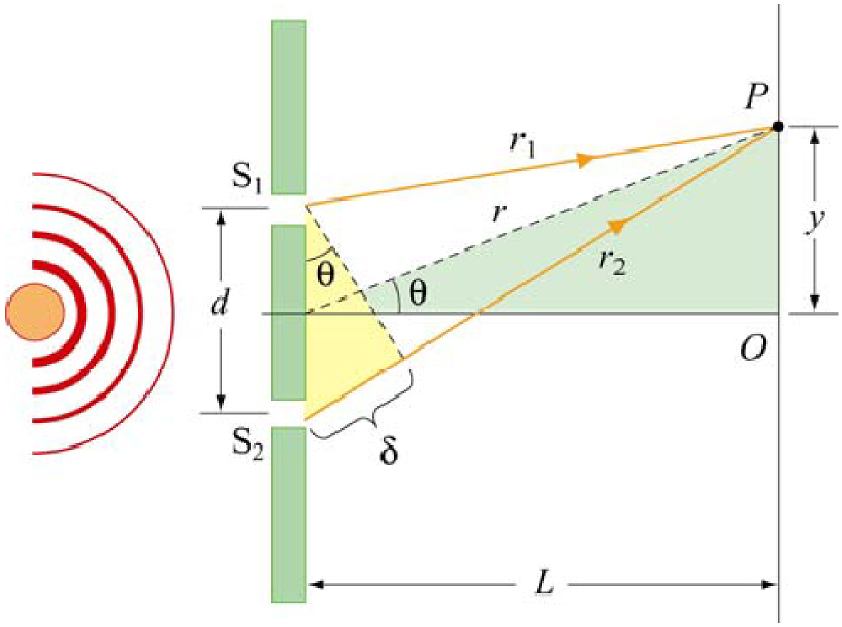
# Coherent, monochromatic plane waves:




In the Figure above, the fringe at point P on the screen will be:

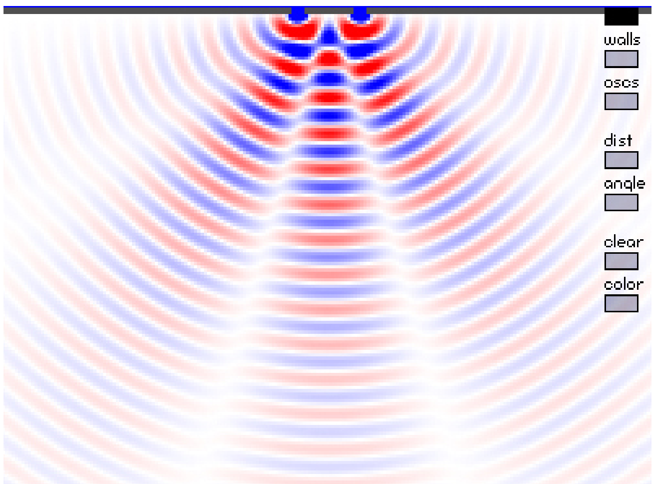
1. An interference maximum
2. An interference minimum
3. Don’t have a clue

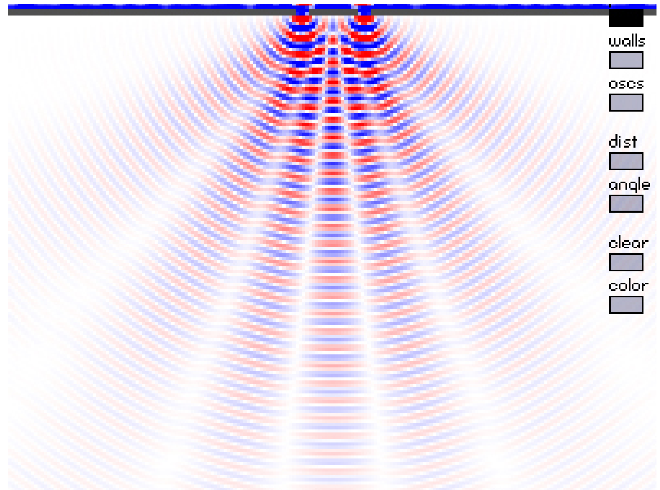



**Coherent monochromatic plane waves impinge on two apertures separated by a distance *d*. An approximate formula for the path length difference between the two rays shown is**

1. $d \sin\theta$
2. $L \sin\theta$
3. $d \cos\theta$
4. $L \cos\theta$
5. **Don't have a clue.**

# Two Slit  Interference:

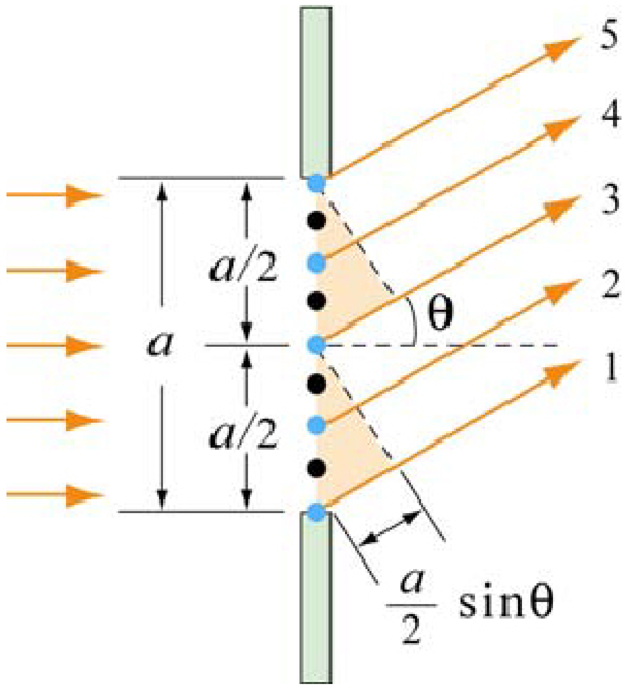



A                                        B

**In the two 2-slit interference patterns above, the frequency of the wave on the left (A) is larger or smaller than the frequency of the wave on the right (B)? The slit spacing *d* is the same in both cases.**

1. ***A* larger than *B***
2. ***A* smaller than *B***
3. **Don’t have a clue**



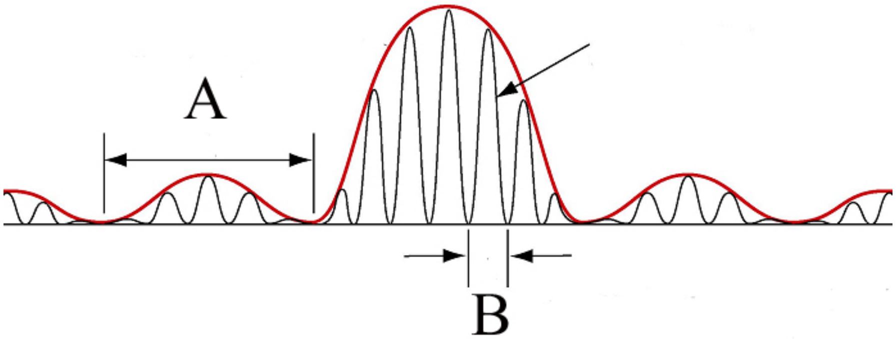

**The light passing through this slit when seen on a screen far from the slit will exhibit *destructive* interference when**

**1.** $\frac{a}{2}\sin\theta = \frac{\lambda}{4}$

**2.** $\frac{a}{2}\sin\theta = \frac{\lambda}{2}$

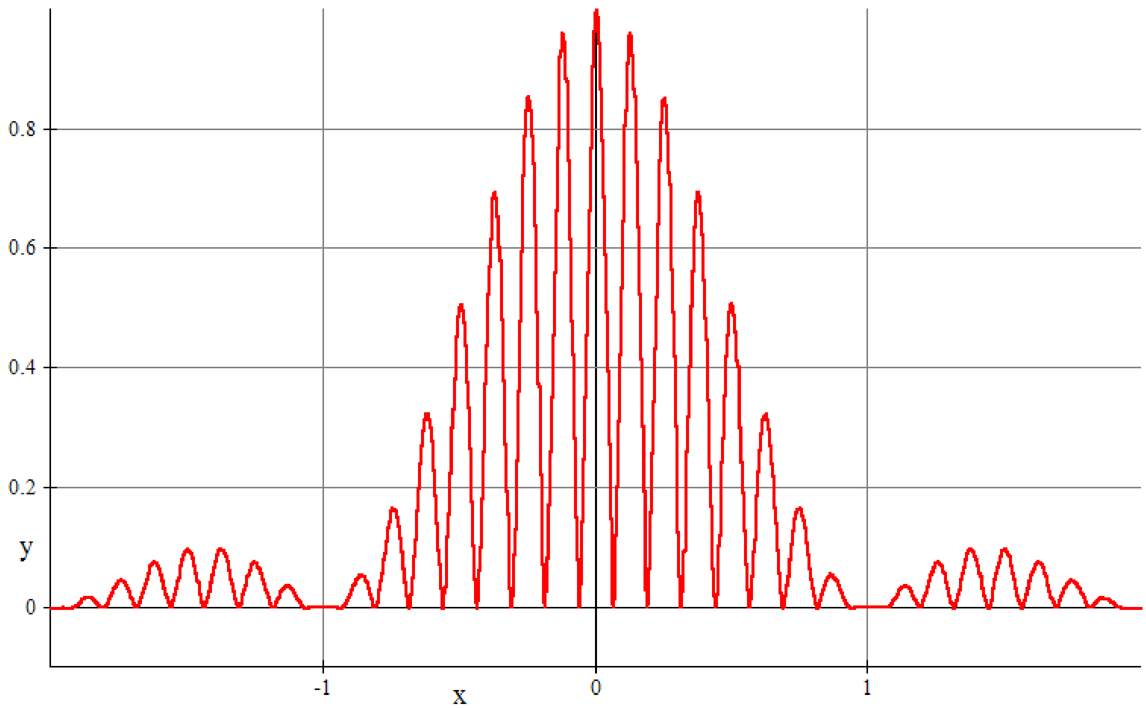
**3.** $\frac{a}{2}\sin\theta = \lambda$

**4. Don't have a clue.**




**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. **Don't have a clue.**




**Coherent monochromatic plane waves impinge on two long narrow (width *a*) apertures separated by a distance *d*. The resulting pattern on a screen far away is shown above. For this arrangement:**

1. **The value of *d/a* is about 1/8**
2. **The value of *d/a* is about 1/4**
3. **The value of *d/a* is about 4**
4. **The value of *d/a* is about 8**
5. **Don't have a clue.**