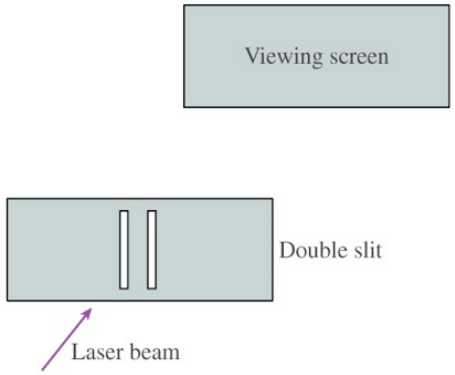
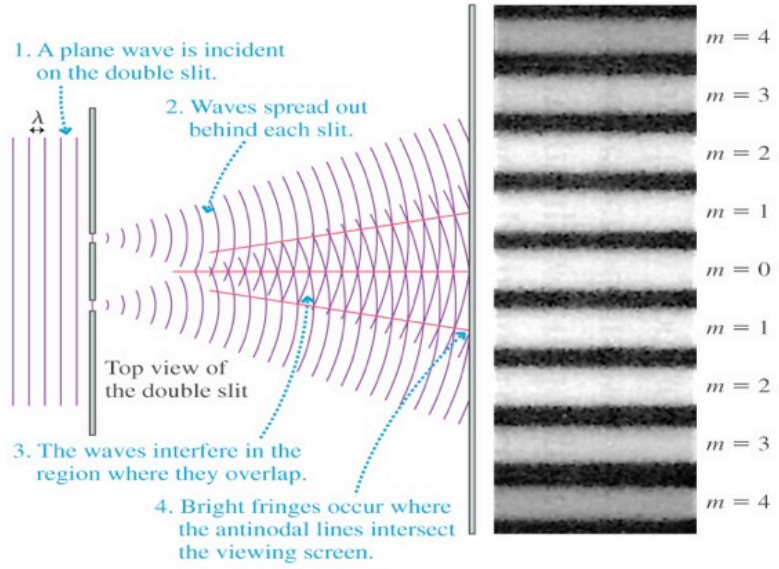




Question:

Suppose the viewing screen in the figure is moved closer to the double slit. What happens to the interference fringes?

(A) They fade out and disappear

(B) They get out of focus

(C) *They get brighter and closer together*

(D) They get brighter and farther apart

(E) They get brighter but otherwise do not change

Question:

Light of wavelength λ_1 illuminates a double slit, and interference fringes are observed on a screen behind the slits. When the wavelength is changed to λ_2, the fringes get closer together. How large is λ_2 relative to λ_1?

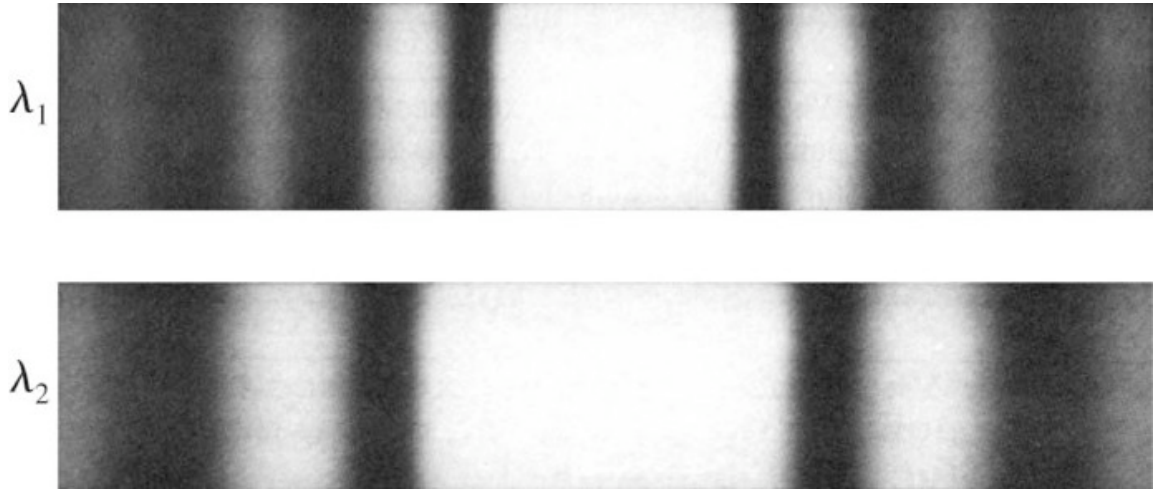
(A) *λ_2 is smaller than λ_1*

(B) λ_2 is larger than λ_1

(C) Cannot be determined from this information

Question:

The figure shows two single-slit diffraction patterns. The distance between the slit and the viewing screen is the same in both cases. Which of the following could be true?



(A) *The wavelengths are the same for both; $a_1 > a_2$*

(B) The wavelengths are the same for both; $a_2 > a_1$

(C) The slits and the wavelengths are the same for both; $p_1 > p_2$

(D) The slits and the wavelengths are the same for both; $p_2 > p_1$

Question:

White light passes through a diffraction grating and forms rainbow patterns on a screen behind the grating. For each rainbow,

(A) *the red side is farthest from the center of the screen, the violet side is closest to the center*

(B) the red side is closest to the center of the screen, the violet side is farthest from the center

(C) the red side is on the left, the violet side on the right

(D) the red side is on the right, the violet side on the left