Double-Slit Interference Worksheet

Assume all light is LASER Light

1. Light falls on a double slit slide. The slits are 2.00×10^{-6} m apart. A screen is placed 14 cm away from the slits. The distance from the center to the first order bright line is 6.0 cm. What is the wavelength of the light?

2. Light of wavelength 6.0×10^{-7} m falls on a double slit. The slits are 2.00×10^{-6} m apart. The distance from the center of the slits to the screen is 55 cm. How far is it from the central bright spot to the first-order line?

3. Light of wavelength 6.0×10^{-7} m falls on a double slit. The distance from the center of the slits to the screen is 55 cm and the distance from central bright spot to the first-order line is 28 cm. How far apart are the slits?

4. Light of wavelength 1.70×10^{-6} m falls on a double slit. The slits are 2.00×10^{-6} m apart. If the distance from the central bright spot to the first-order line is 22 cm, how far are the slits from the screen?

5. Light falls on a double slit. The slits are 8.00×10^{-6} m apart. A screen is placed 14 cm from the slits. The distance from the center to the first order bright line is 7.0 cm. What is the wavelength of the light?

6. Light of wavelength 9.0×10^{-7} m falls on a double slit. The slits are 1.85×10^{-6} m apart. The distance from the center of the slits to the screen is 55 cm. How far is it from the central bright spot to the first-order line?

7. Light of wavelength 1.8×10^{-6} m falls on a double slit. The distance from the center of the slits to the screen is 45 cm and the distance from central bright spot to the first-order line is 28 cm. How far apart are the slits?

8. Light of wavelength 1.90×10^{-6} m falls on a double slit. The slits are 1.00×10^{-4} m apart. If the distance from the central bright spot to the first-order line is 22 cm, how far are the slits from the screen?

Answers:
1. 8.6×10^{-7} m
2. 0.17 m
3. 1.3×10^{-6} m
4. 0.26 m
5. 4.0×10^{-6} m
6. 0.27 m
7. 2.9×10^{-6} m
8. 12 m

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