

Physics 391
Lesson 24 Preflight

1. Given two slits, describe the steps you would follow to derive equation 10.24. I'm not looking for mathematical formulas, but rather a description in words.
2. How will a multiple slit diffraction pattern change if I double the width of the slits?
3. How will a multiple slit diffraction pattern change if I double the spacing between the slits?
4. Explain where the factor of 1.22 in equations 10.57 and 10.58 comes from (this factor is often included in introductory textbooks such as Wolfson's Essential University Physics, p. 578, with little explanation).
5. Explain both the Rayleigh and Sparrow criteria for determining if two objects are resolved.
6. What is the difference between the resolving power and the free spectral range of a diffraction grating?