

- 1) A monochromatic source emits light of only one wavelength and frequency. Describe in detail how you could use a diffraction grating to determine the wavelength of light from a monochromatic source. You should include:
 - a) a description of any apparatus used.
 - b) an explanation of measurements taken. (Your method should give as accurate a result for the wavelength as possible when clear first and second order maxima are visible.)
 - c) an explanation of how these measurements could be used to calculate the wavelength of the light source.
- 2) A white light source is shone through a narrow opening onto a diffraction grating in order to produce an interference pattern.
 - a) Describe in detail the interference pattern produced
 - b) In what ways does this pattern differ from the effect of shining a narrow beam of white light through a triangular prism?
- 3) The visible spectrum is just part of the electromagnetic spectrum.
 - a) Draw the electromagnetic spectrum.
 - b) Label which end has the highest frequency waves and which end has the longest wavelength waves.
 - c) Mark on your diagram suitable wavelengths for red, green and blue light.

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