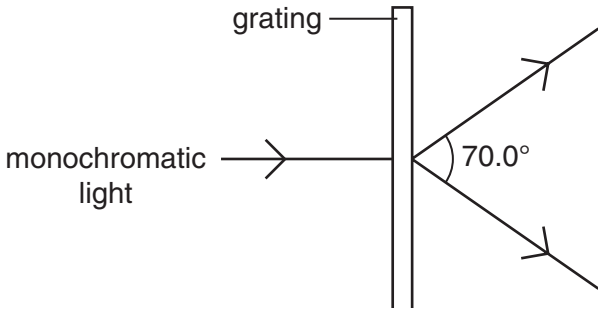
28 A diffraction grating is used to measure the wavelength of monochromatic light, as shown in the diagram.



The spacing of the slits in the grating is 1.00×10^{-6} m. The angle between the first order diffraction maxima is 70.0°.

What is the wavelength of the light?

A 287 nm **B** 470 nm **C** 574 nm **D** 940 nm

29 What physical quantity would result from a calculation in which a potential difference is multiplied by an electric charge?

A electric current

B electric energy

C electric field strength

D electric power

30 The current in a component is reduced uniformly from 100 mA to 20 mA over a period of 8.0 s.

What is the charge that flows during this time?

A 160 mC **B** 320 mC **C** 480 mC **D** 640 mC

31 The sum of the electrical currents into a point in a circuit is equal to the sum of the currents out of the point.

Which of the following is correct?

A This is Kirchhoff's first law, which results from the conservation of charge.

B This is Kirchhoff's first law, which results from the conservation of energy.

C This is Kirchhoff's second law, which results from the conservation of charge.

D This is Kirchhoff's second law, which results from the conservation of energy.