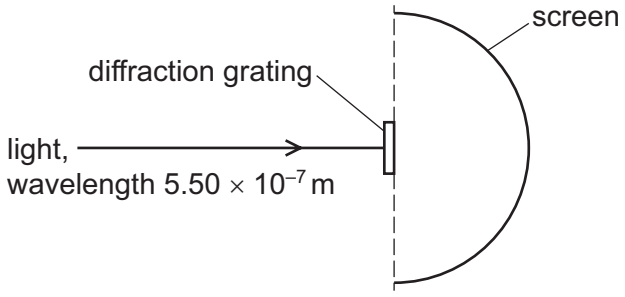
29 Light of wavelength 5.50×10^{-7} m from a laser is incident normally on a diffraction grating.

The diffracted light is incident on a semicircular screen, as shown in the view from above.



view from above

A total of 9 bright dots are formed on the screen.

The grating is at the centre of the semicircle. The lines of the grating are vertical. The separation between adjacent lines in the grating is *d*.

What is a possible value of *d*?

A 2.25×10^{-6} m **B** 2.80×10^{-6} m **C** 4.40×10^{-6} m **D** 4.95×10^{-6} m

30 Which quantity is given by the product of charge and electric potential difference?

A current

B energy transferred

C power dissipated

D resistance

31 The current in a filament lamp is increased.

Which statement about the lamp is correct?

A The brightness of the lamp decreases.

B The potential difference across the filament decreases.

C The resistance of the filament decreases.

D The temperature of the filament increases.