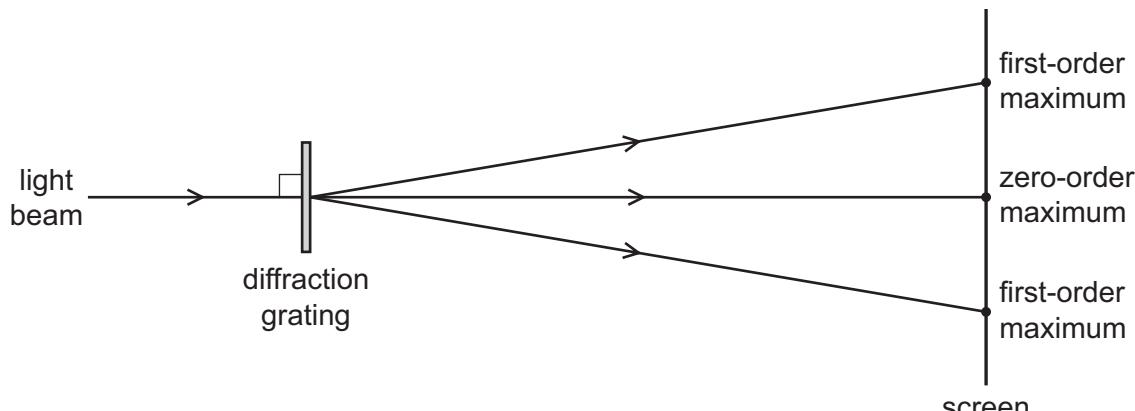


- 29 A beam of red laser light of wavelength 633 nm is incident normally on a diffraction grating with 600 lines per mm.



The beam of red light is now replaced by a beam of blue laser light of wavelength 445 nm. A replacement diffraction grating is used so that the first-order maximum of the blue light appears at the same position on the screen as the first-order maximum of the red light from the original laser.

How many lines per mm are there in the replacement diffraction grating?

- A 420 mm^{-1} B 470 mm^{-1} C 600 mm^{-1} D 850 mm^{-1}