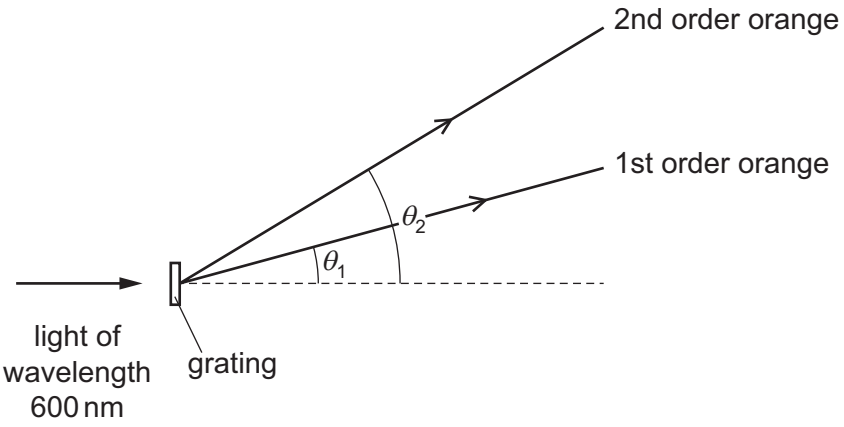
29 A diffraction grating experiment is set up using orange light of wavelength 600 nm. The grating has a slit separation of 2.00 μm.



What is the angular separation ($\theta_2 - \theta_1$) between the first and second order maxima of the orange light?

A 17.5° **B** 19.4° **C** 36.9° **D** 54.3°

30 Two horizontal parallel plate conductors are separated by a distance of 5.0 mm in air. The lower plate is earthed and the potential of the upper plate is +50 V.

What is the electric field strength *E* at a point midway between the plates?

A $1.0 \times 10^4\,\text{V m}^{-1}$ downwards

B $1.0 \times 10^4\,\text{V m}^{-1}$ upwards

C $2.0 \times 10^4\,\text{V m}^{-1}$ downwards

D $2.0 \times 10^4\,\text{V m}^{-1}$ upwards