19 A beam of monochromatic light is incident normally on a diffraction grating with N_1 number of lines per millimetre. The second order diffracted beam makes an angle of 45° with the grating.

The grating is then replaced by one with N_2 number of lines per millimetre. The third order diffracted beam is now observed at the same angle.

What is the ratio of $\dfrac{N_1}{N_2}$?

A 0.47 **B** 0.67 **C** 1.1 **D** 1.5