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**D is the correct answer as decreasing the distance between the central maximum and the first order maximum would require  $\sin\theta$  to be reduced (presuming that the distance from the diffraction grating to the screen is unchanged), and  $\lambda = \frac{d \sin\theta}{n}$**

A is not the correct answer as this does not affect  $\sin\theta$

B is not the correct answer as this would increase the distance between the central maximum and first order maximum

C is not the correct answer as more lines per mm would make  $d$  smaller, so as  $d = \frac{n\lambda}{\sin\theta}$ , which would make  $\sin\theta$  increase

(1)