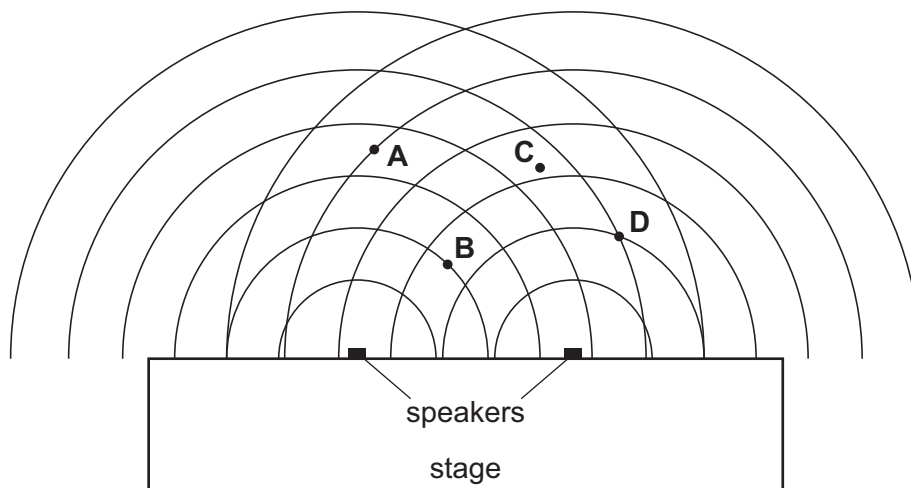


- 27** An outdoor concert has two large speakers beside the stage for broadcasting music.

In order to test the speakers, they are made to emit sound of the same wavelength and the same amplitude.

The curved lines in the diagram represent wavefronts.

Where is the loudest sound heard?



- 28** An electromagnetic wave is incident normally on a diffraction grating.

A second-order maximum is produced at an angle of 30° to a normal to the grating.

The grating has 5000 lines per cm.

What is the wavelength of the wave?

- A** $2.5 \times 10^{-7} \text{ m}$ **B** $5.0 \times 10^{-7} \text{ m}$ **C** $1.0 \times 10^{-6} \text{ m}$ **D** $5.0 \times 10^{-5} \text{ m}$

- 29** P is a point near to charge X as shown.



When a negatively charged test charge is placed at point P, it is found to experience a force of repulsion from X that is radially away from X.

Which arrow correctly shows the direction of the electric field at point P due to the charge X?

