

- 23** Diagram 1 shows a ripple tank experiment in which plane waves are diffracted through a narrow slit in a metal sheet.

Diagram 2 shows the same tank with a slit of greater width.

In each case, the pattern of the waves incident on the slit and the emergent pattern are shown.

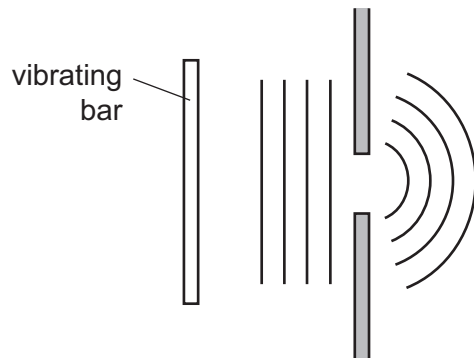


diagram 1

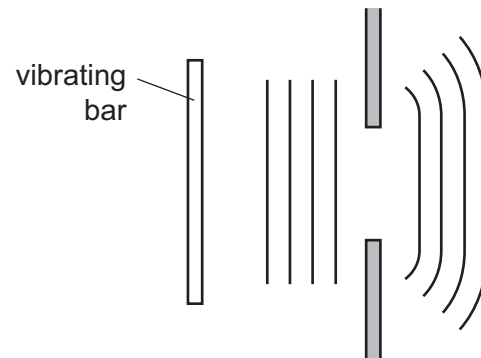


diagram 2

Which action would cause the waves in diagram 1 to be diffracted less and so produce an emergent pattern closer to that shown in diagram 2?

- A** increasing the frequency of vibration of the bar
 - B** increasing the speed of the waves by making the water in the tank deeper
 - C** reducing the amplitude of vibration of the bar
 - D** reducing the length of the vibrating bar
- 24** Electromagnetic waves from an unknown source in space were found to be significantly diffracted when passing through gaps of the order of 10^{-5} m.

Which type of wave are they most likely to be?

- A** radio waves
- B** microwaves
- C** infra-red waves
- D** ultraviolet waves

Space for working