

16 The speed of sound in sea water varies with depth as shown in diagram A.

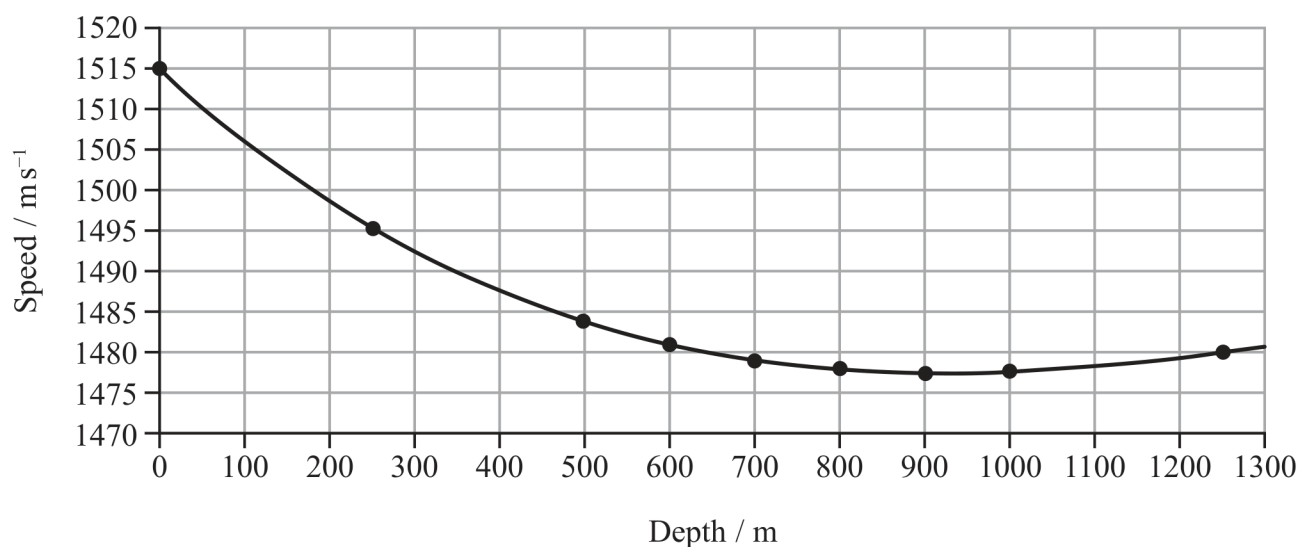


Diagram A

Sound produced at a depth of 900 m initially travels towards the water surface. As the sound approaches a depth of 700 m it changes direction and follows the path shown to the point P in diagram B.

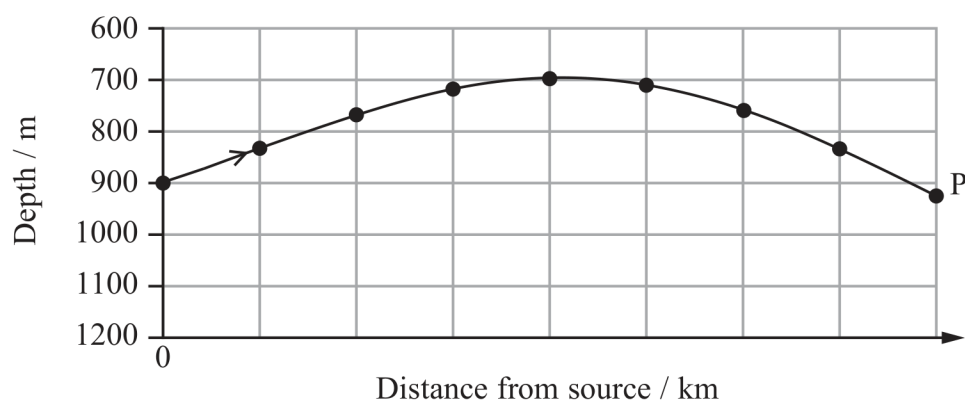


Diagram B



- (a) Explain why the sound follows the path shown in diagram B.

Your answer should refer to refraction and diagram A.

(5)

- (b) Sound that travels in a straight line from the source to point P takes longer to arrive than sound that travels along the path shown in diagram B.

Suggest why.

(2)

- (c) Suggest two factors that might cause the speed of sound to vary with the depth of the sea.

(2)