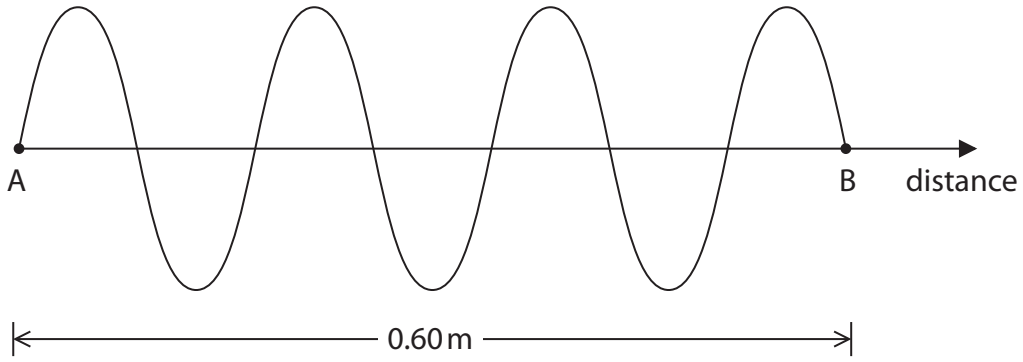
6 (a) The diagram represents a microwave travelling in free space from point A to point B.



(i) The distance from A to B is 0.60 m.

Calculate the wavelength of this microwave.

(2)

wavelength = ... m

(ii) State the equation linking wave speed, frequency and wavelength.

(1)

(iii) Calculate the frequency of this microwave.
[speed of microwave in free space = 3.0×10^8 m/s]

(3)

frequency = ... Hz

(b) The diagrams show what happens to radio waves and microwaves as they move past a hill.

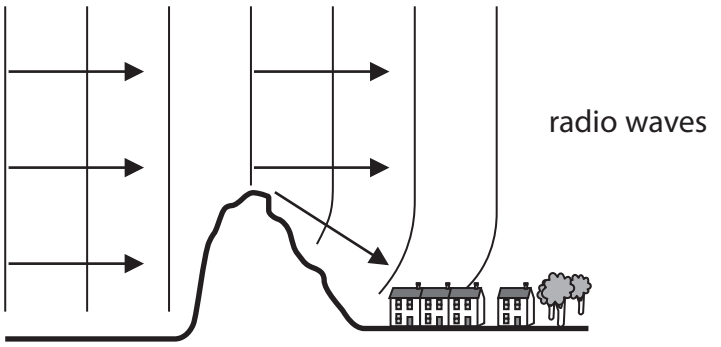


Diagram 1

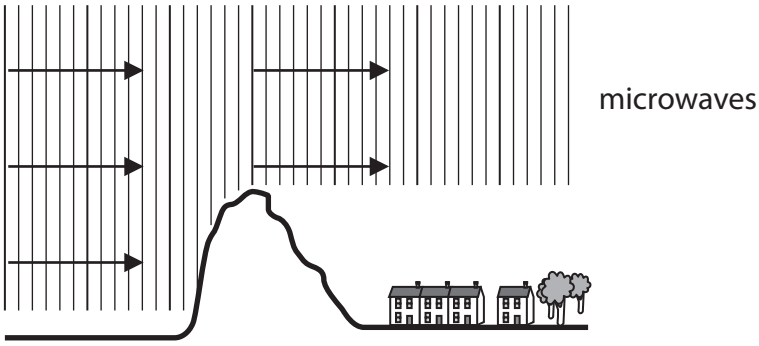


Diagram 2

(i) Name the effect shown by the radio waves in diagram 1.

(1)

.....

(ii) Suggest why this effect is not shown by the microwaves in diagram 2.

(2)

.....

.....

.....

.....

(Total for Question 6 = 9 marks)

TURN OVER FOR QUESTION 7