

**GCSE Physics B (Twenty First Century Science)**  
**J259/03** Depth in physics (Higher Tier)

**Question Set 31**

1 Sarah and Jack experiment with two hand-held radios.



(a) The radio waves have a frequency of 446 MHz and speed of  $3.0 \times 10^8$  m/s.

(i) Explain why Sarah and Jack cannot see the radio waves.

[2]

(ii) Calculate the wavelength of the radio waves.

Use the equation: wavelength = wave speed  $\div$  frequency

Give your answer to 2 significant figures.

Wavelength = ..... m [4]

(b) Describe how electrical circuits in the radios can produce radio waves.

[1]

**Total Marks for Question Set 31: 7**

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