

# 14 Interference, standing waves, and diffraction – Part 2 —Answers

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## Answers

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Work through these after you have tried the questions yourself.

**2.1** (a) they add to make a bigger wave (constructive interference). \ (b) they cancel out (destructive interference).

**2.2** a node is a point that never moves; an antinode is a point that moves the most.

**2.3**  $\lambda = 2L = 2 \times 0.50 = 1.0 \text{ m}$ , so  $f = \frac{v}{\lambda} = \frac{300}{1.0} = 300 \text{ Hz}$ .

**2.4** sound has a long wavelength, so it diffracts (spreads) around the corner easily; light has a tiny wavelength, so it barely diffracts and travels almost straight.

**2.5** a pattern of bright and dark fringes (bands), caused by interference of the light from the two slits.