

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

Answers

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