

Review 1

Physics - Key Stage 3

Sound waves - Lesson 6

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Review questions

Key words: *vibration, energy, particles, transverse, longitudinal, amplitude, frequency, parallel, perpendicular, wavelength, peak, trough, rough, smooth, metres per second (m/s)*

1. What causes sound?
2. How does sound travel?
3. Name the 2 types of wave and examples of each. Describe the differences between them.
4. Draw and label an oscilloscope trace.
5. What is the volume of a sound determined by?
6. What is the pitch of a sound determined by?
7. Identify the type of material that will reflect sound and the type of material that will absorb sound.
8. What is echolocation and who is it used by?
9. Identify the approximate speed of sound in solids, liquids and gases.
10. If a car travels 50km in 35 minutes, how fast must it have been going?



Key word practise

1. Longitudinal waves

2. Transverse waves

3. Frequency

4. Amplitude

5. Echo

6. Echolocation

7. Hertz

8. Decibel

a) Waves in which particle vibration is perpendicular to direction of energy transfer

b) The displacement of particles caused by vibrations

c) A reflection of a sound wave from a surface

d) Waves in which particle vibration is parallel to direction of energy transfer

e) The unit for frequency

f) The number of waves that pass a second point per second

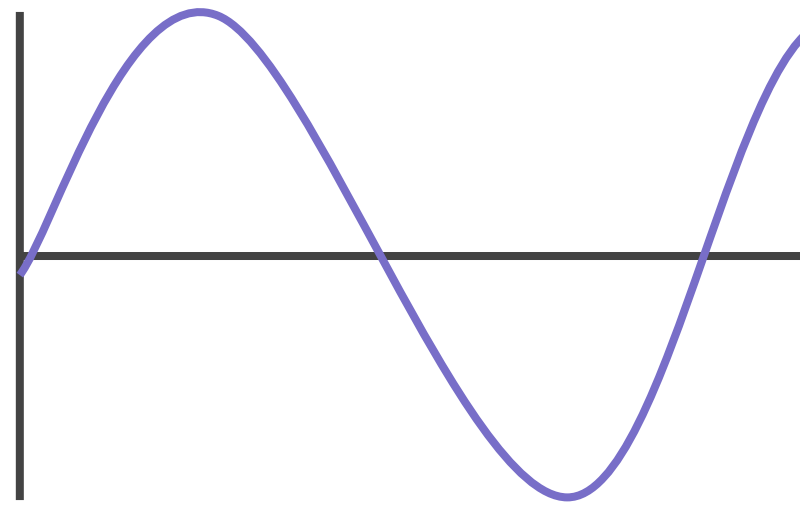
g) The unit for volume

h) Using reflections of sound waves to calculate distance from a starting point to an object

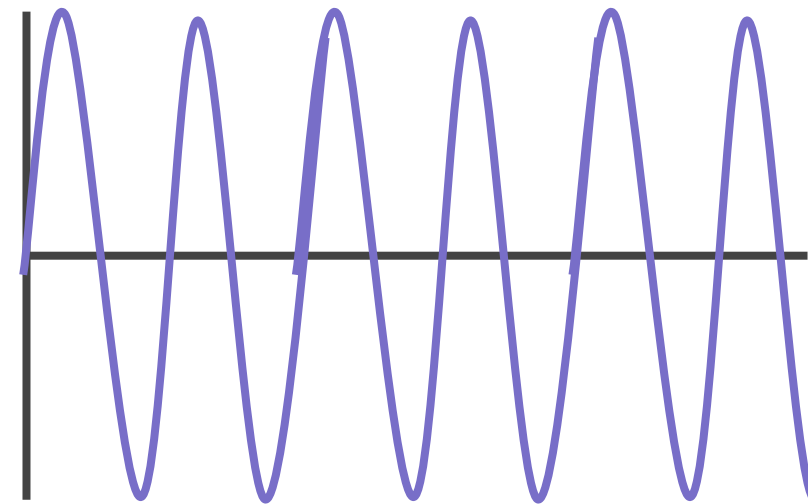


Which of the following waves will produce a sound with a low pitch and a high volume?

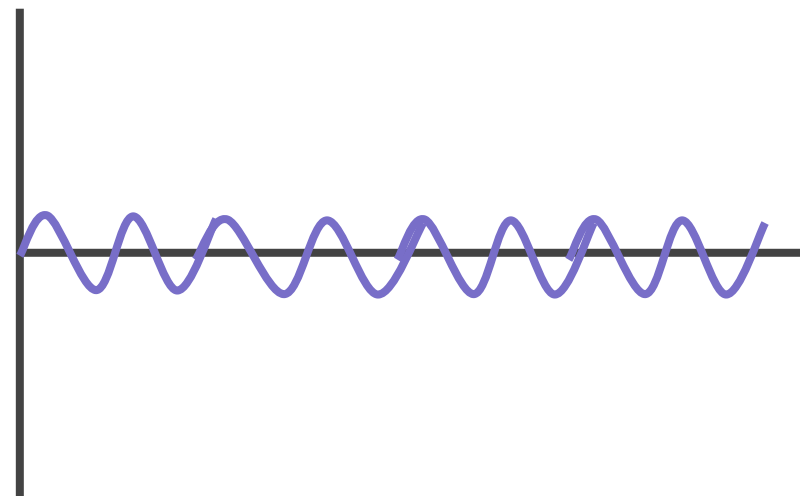
Option 1



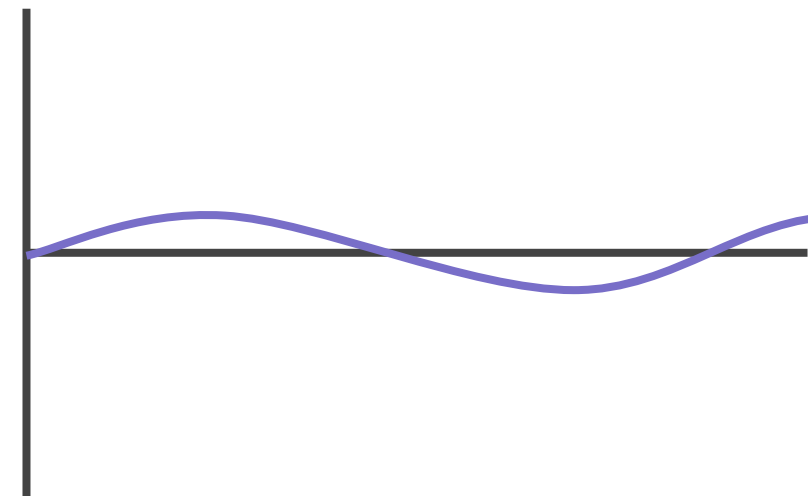
Option 2



Option 3

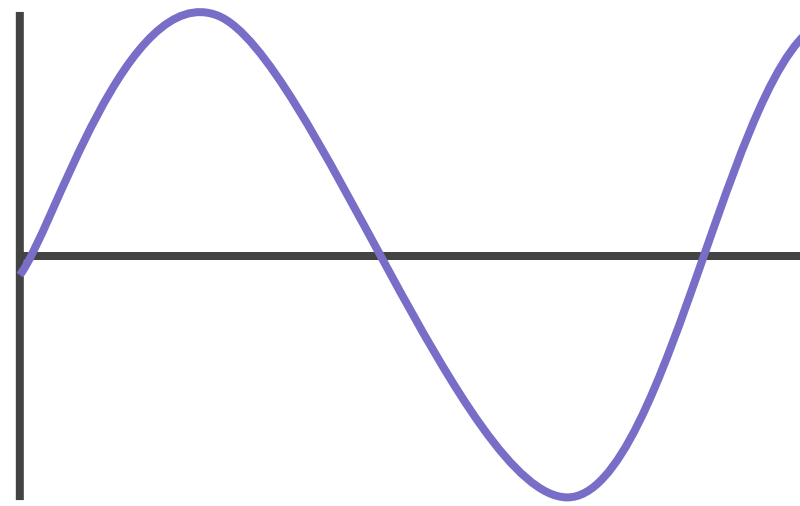


Option 4

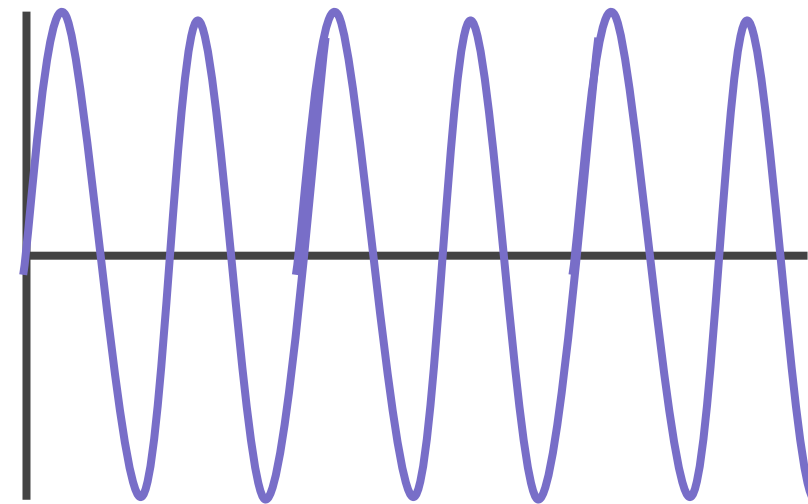


Which of the following waves will produce a sound with a high pitch and a low volume?

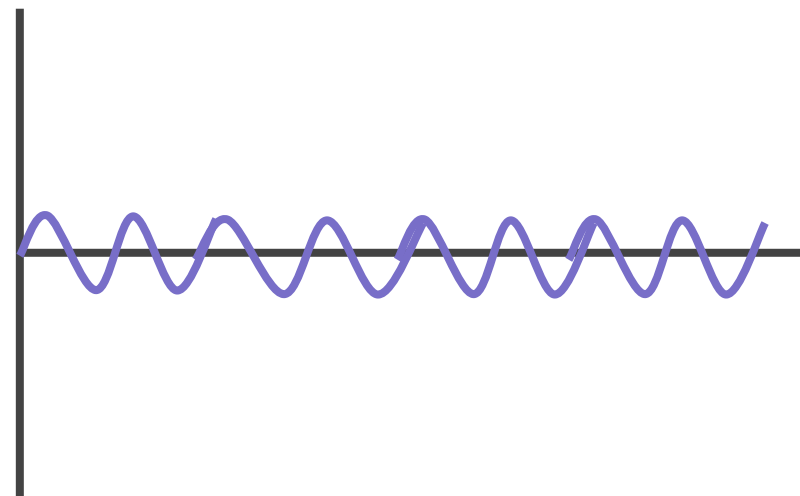
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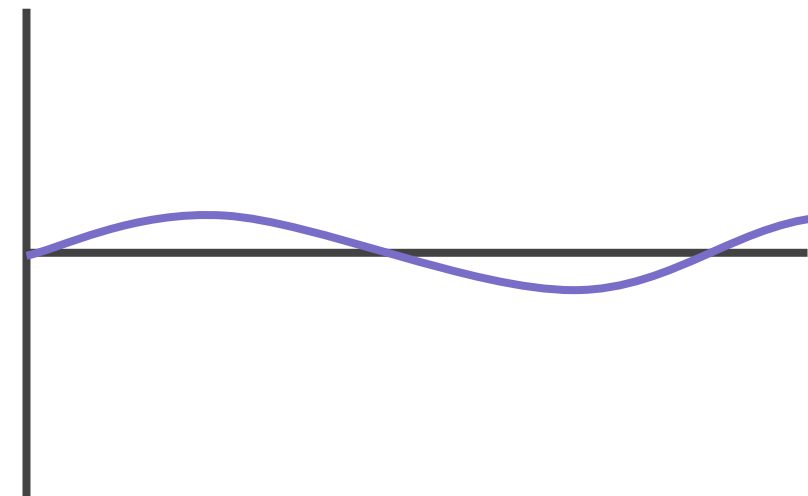
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Option 3

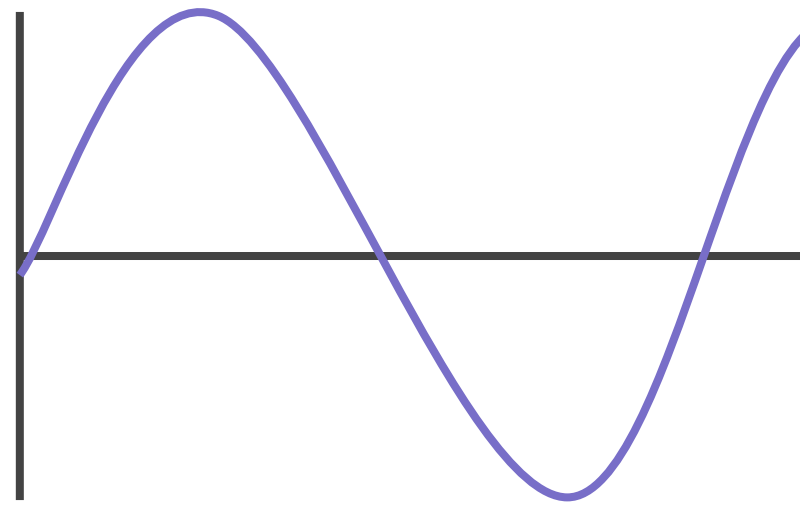


Option 4

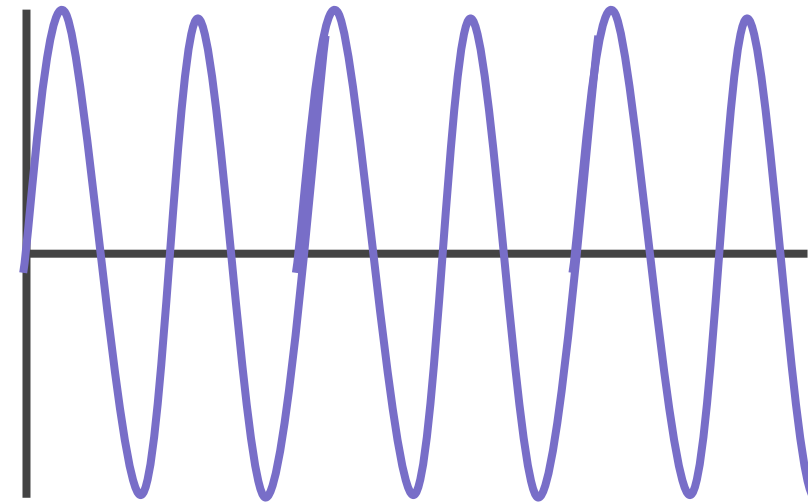


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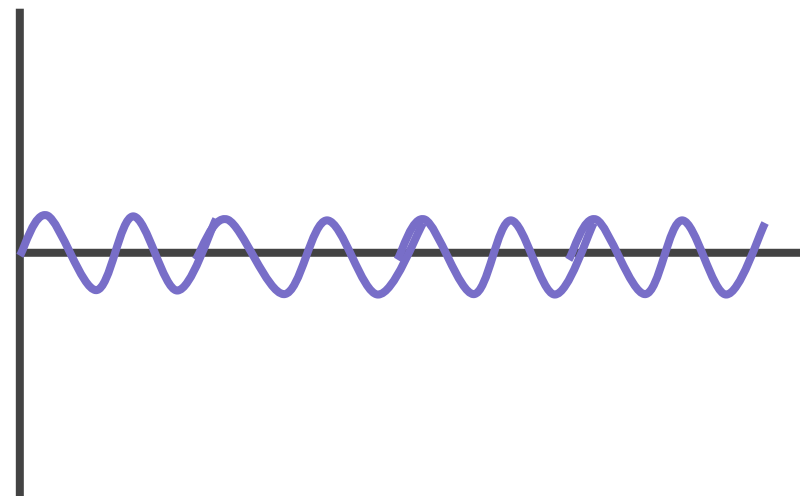
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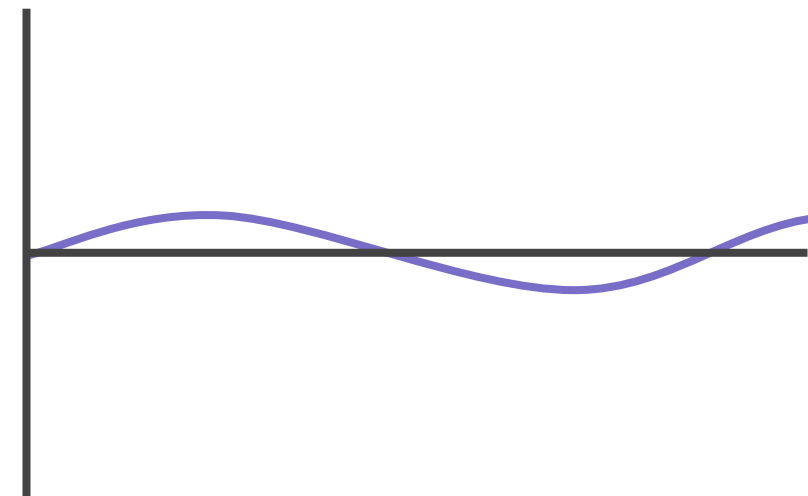
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Option 3

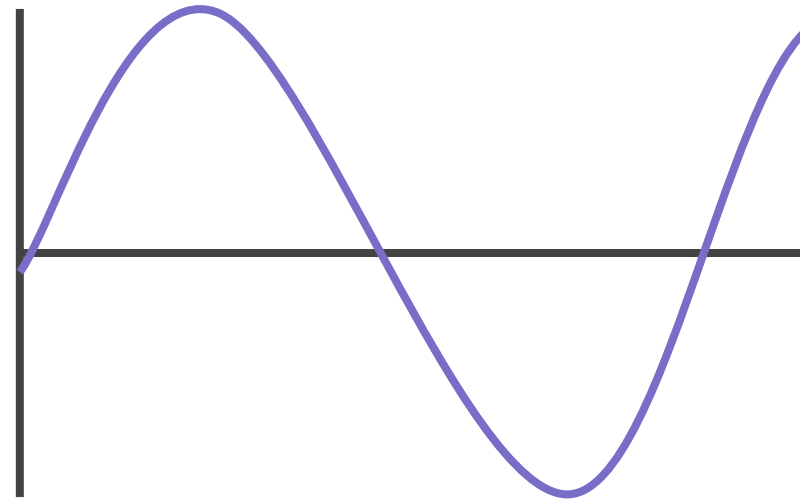


Option 4

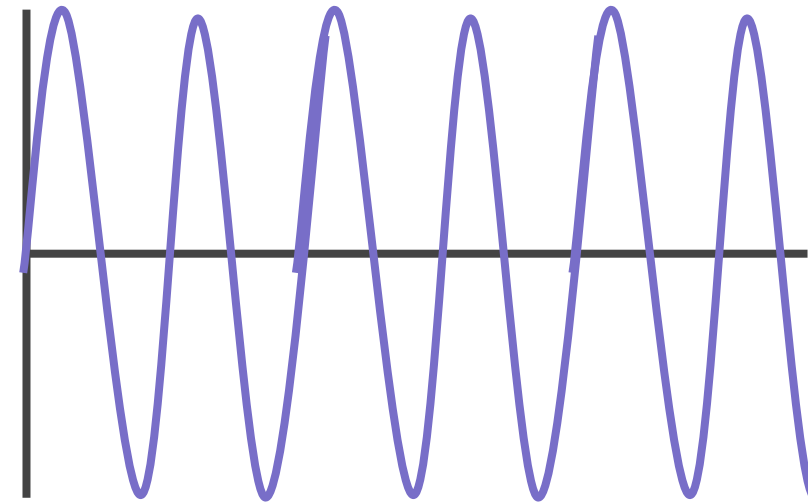


Which of the following waves will produce a sound with a low pitch and a low volume?

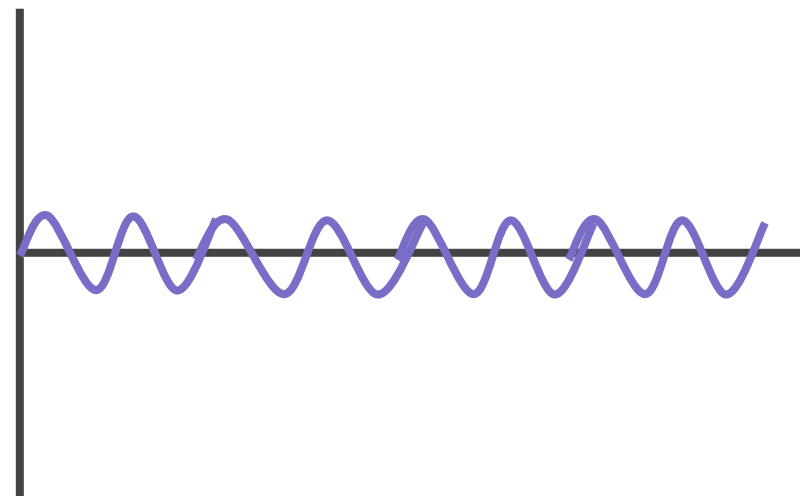
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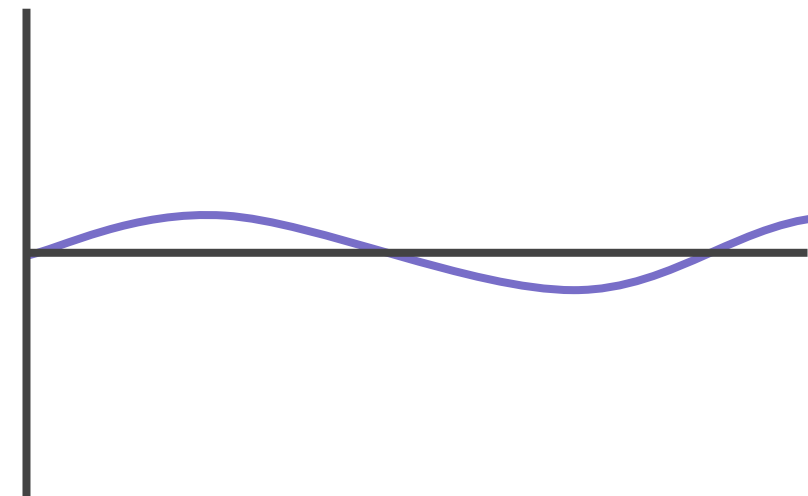
Option 2



Option 3



Option 4



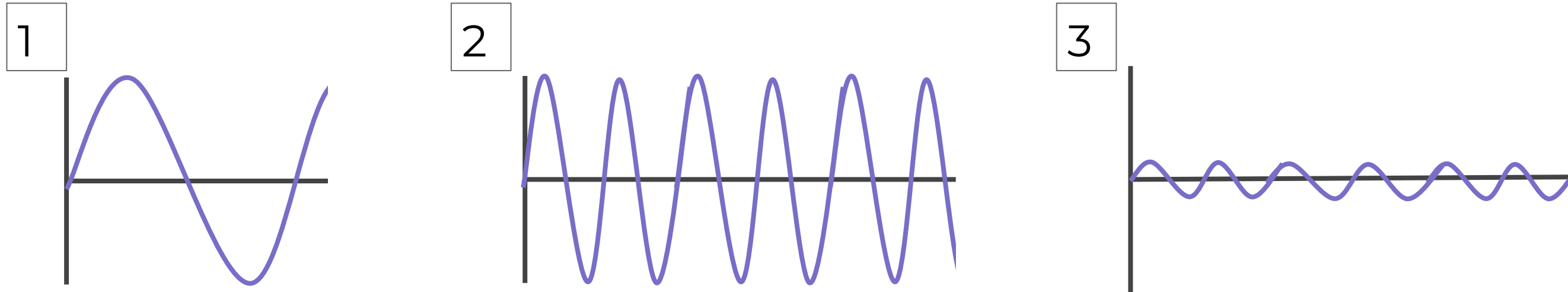
Drawing oscilloscope traces

1. A high pitch and a low volume
2. A low pitch and a low volume
3. A low pitch and a high volume
4. A high pitch and a high volume



Exam-style question

An oscilloscope produces 3 traces.



a) i) Which of the sounds will have the same volume?

ii) How do you know this?

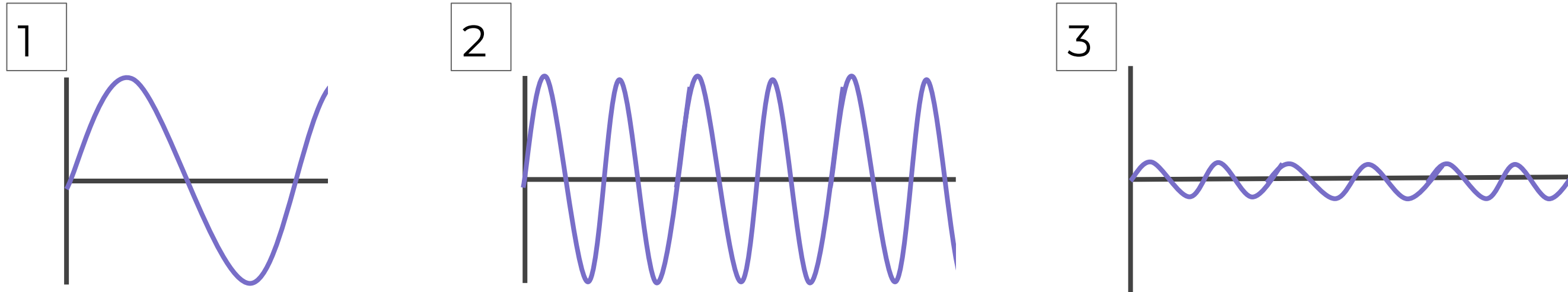
b) i) Which of the sounds will have the same pitch?

ii) How do you know this?



Exam-style question

An oscilloscope produces 3 traces.

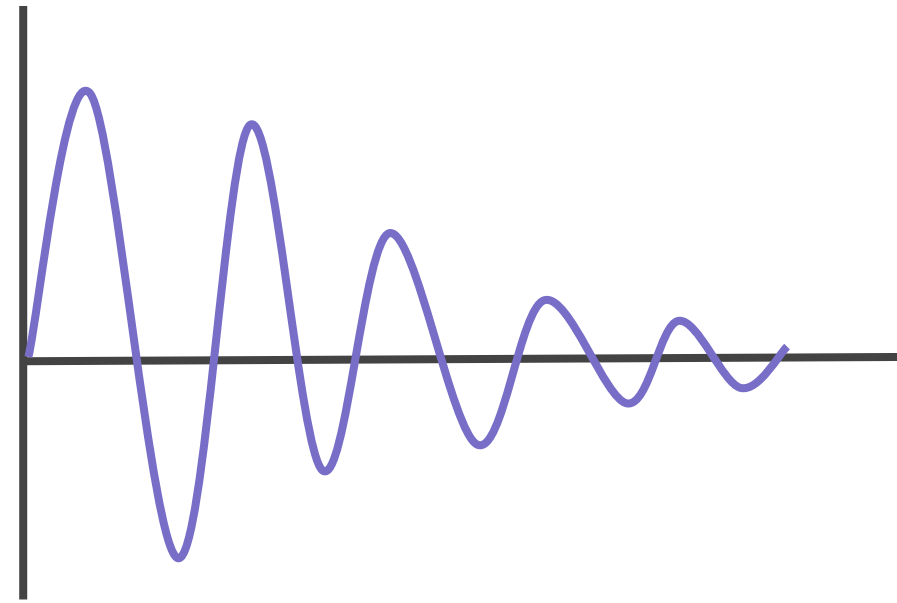


How would the sound produced by wave 1 differ from the sound produced by wave 3?



Exam-style question

An oscilloscope produces a trace of a baby crying.



How can you tell the baby's cry gets quieter over time?

