

2 (a) Read this passage from a health leaflet.

Most children can hear the full range of sounds which can be detected by the human ear. But as people get older, they cannot hear the higher frequencies.

2 (a) (i) Complete this statement.

Most children can detect sounds in the frequency range

..... Hz to Hz.
(1 mark)

2 (a) (ii) What word is used to describe sound with a frequency so high that it cannot be heard by humans?

.....
(1 mark)

2 (b) Read this cutting from a newspaper.

A shopkeeper has fitted a special loudspeaker outside his store.
“We used to have gangs of young people out there,” he said, “but now, when I switch on the special loudspeaker, they hate the sound and go away.”
Older people are not bothered by the sound because the frequency is too high for them to hear it.

Some people support the use of the special loudspeaker but other people do not.

Give **one** reason against its use.

.....
.....
(1 mark)

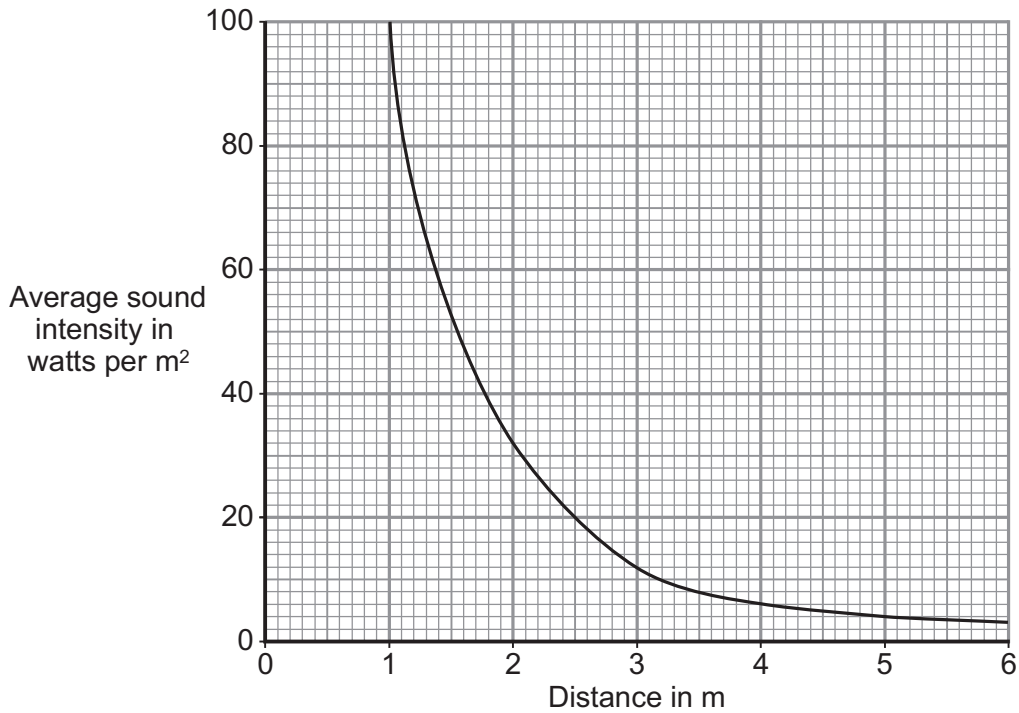
2 (c) Machines are often very noisy. They transfer energy, and some of the energy is transformed into sound.

What is the cause of the sound?

.....
(1 mark)



2 (d) Sound from a machine may damage the hearing of people who work close by. A safety officer measures the sound intensity at different distances from a noisy machine. The average results are shown on the graph.



2 (d) (i) Describe the pattern shown by the graph.

Use one or more examples from the graph to support your description.

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(2 marks)

2 (d) (ii) Average results were plotted.

Explain why taking results several times and then calculating average values is more reliable than taking only a single result.

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(2 marks)

8

Turn over ►

