

## Homework 29d Musical sounds

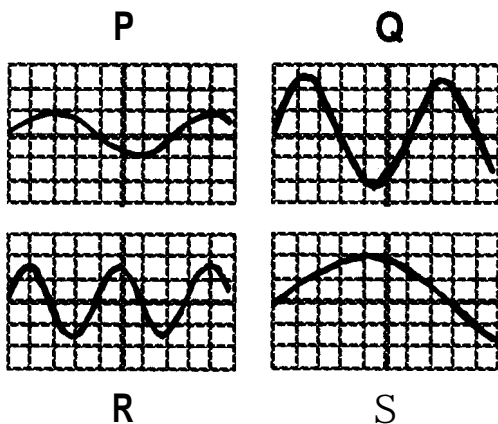
1. Use the words in the HELP-BOX to copy and complete the paragraph below.

frequency	molecules	hertz	higher
vibrations	energy	amplitude	wave

Sounds are caused by ..... Sounds travel through the air as a ..... The molecules of the air vibrate and ..... is passed from molecule to molecule. Bigger vibrations have a larger ..... and so are louder. The number of sound waves produced each second is called the ..... Frequency is measured in ..... (Hz). The greater the frequency the ..... the pitch of the sound.

2. (i) What device takes in sound energy and produces electrical energy?  
(ii) What device has a screen which can show a display of a sound wave?  
(iii) What device is used in radios and televisions to produce sound from electrical energy?

3. The diagrams below show four sound waves displayed on a cathode-ray oscilloscope (CRO). The CRO controls are all set the same way for the display. Answer the following questions about the sounds.



- (a) Which has the largest amplitude?  
(b) Which has the highest frequency?  
(c) Which was the quietest sound?  
(d) Which sound has the lowest pitch?

4. Describe how you would do an experiment using a microphone and a CRO to investigate the differences in the sound waves produced by a flute and violin.