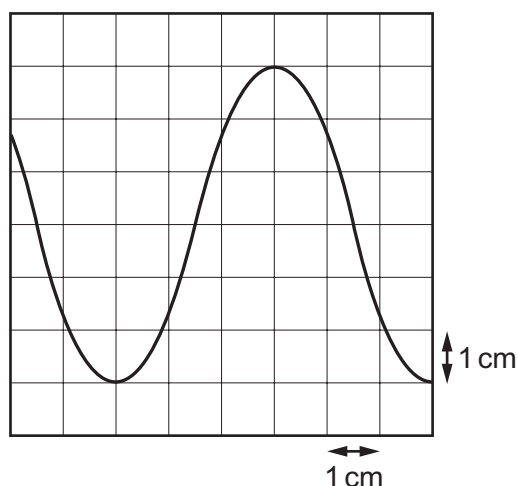


- 22** A microphone connected to the Y-plates of a cathode-ray oscilloscope (c.r.o.) is placed in front of a loudspeaker. The trace on the screen of the c.r.o. is shown.



The time-base setting is 0.5 ms cm^{-1} and the Y-plate sensitivity is 0.2 mV cm^{-1} .

What is the frequency of the sound from the loudspeaker and what is the amplitude of the trace on the c.r.o.?

	frequency /Hz	amplitude /mV
A	330	0.6
B	330	1.2
C	670	0.6
D	670	1.2

- 23** A source of sound of frequency 1000 Hz moves away from a stationary observer at a speed of 30.0 ms^{-1} . The speed of sound is 330 ms^{-1} .

What is the frequency of the sound heard by the observer?

- A** 909 Hz **B** 917 Hz **C** 1090 Hz **D** 1100 Hz

- 24** Each of the principal radiations of the electromagnetic spectrum has a range of wavelengths.

Which wavelength is correctly linked to its radiation?

	wavelength /m	radiation
A	10^{-9}	gamma ray
B	10^{-5}	microwave
C	10^{-8}	ultraviolet
D	10^{-14}	X-ray