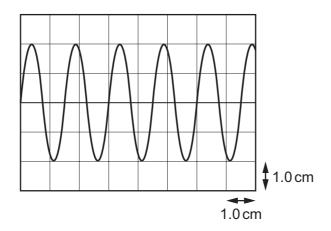
23 A trace is shown on the screen of a cathode-ray oscilloscope (c.r.o.).



The time-base setting is  $2.5\,\mathrm{ms\,cm^{-1}}$  and the Y-gain is  $2.0\,\mathrm{V\,cm^{-1}}$ .

What is the frequency and the amplitude of the waveform displayed by the c.r.o.?

	frequency /Hz	amplitude /V	
Α	0.00375	4.0	
В	0.00375	8.0	
С	267	4.0	
D	267	8.0	

24 A high-speed train approaches a stationary observer at a speed of  $80\,\mathrm{m\,s^{-1}}$ . The train's horn emits a sound of frequency 250 Hz.

The speed of sound is  $340 \,\mathrm{m\,s^{-1}}$ .

What is the observed frequency of the sound from the horn?

- **A** 190 Hz
- **B** 200 Hz
- **C** 310 Hz
- **D** 330 Hz

25 Which row shows a correct frequency in Hz for each of the four principal radiations?

	X-rays	ultraviolet	microwaves	infra-red
Α	10 <sup>10</sup>	10 <sup>14</sup>	10 <sup>18</sup>	10 <sup>15</sup>
В	10 <sup>14</sup>	10 <sup>18</sup>	10 <sup>15</sup>	10 <sup>10</sup>
С	10 <sup>15</sup>	10 <sup>10</sup>	10 <sup>14</sup>	10 <sup>18</sup>
D	10 <sup>18</sup>	10 <sup>15</sup>	10 <sup>10</sup>	10 <sup>14</sup>