

- 26** In one of the first experiments to demonstrate the Doppler effect, a train was filled with trumpeters all playing a note of frequency 440 Hz. The difference in observed frequency of the note as the train directly approached a stationary observer was 22 Hz. The speed of sound was  $340 \text{ m s}^{-1}$ .

At which speed was the train moving?

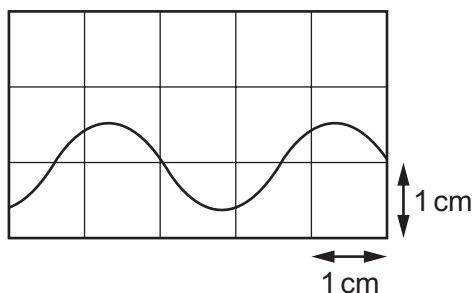
- A**  $15.4 \text{ m s}^{-1}$       **B**  $16.2 \text{ m s}^{-1}$       **C**  $17.0 \text{ m s}^{-1}$       **D**  $17.9 \text{ m s}^{-1}$

- 27** The electromagnetic spectrum consists of waves with different wavelengths.

Which row correctly identifies regions of the electromagnetic spectrum?

	$10^{-10} \text{ m}$	$10^{-8} \text{ m}$	$10^{-5} \text{ m}$	$10^{-2} \text{ m}$
<b>A</b>	microwaves	X-rays	ultraviolet	infrared
<b>B</b>	infrared	microwaves	X-rays	ultraviolet
<b>C</b>	microwaves	infrared	ultraviolet	X-rays
<b>D</b>	X-rays	ultraviolet	infrared	microwaves

- 28** A cathode-ray oscilloscope (CRO) is used to display the trace from a sound wave. The time-base is set at  $5 \mu\text{s mm}^{-1}$ .



What is the frequency of the sound wave?

- A** 6.7 Hz      **B** 67 Hz      **C** 6.7 kHz      **D** 67 kHz