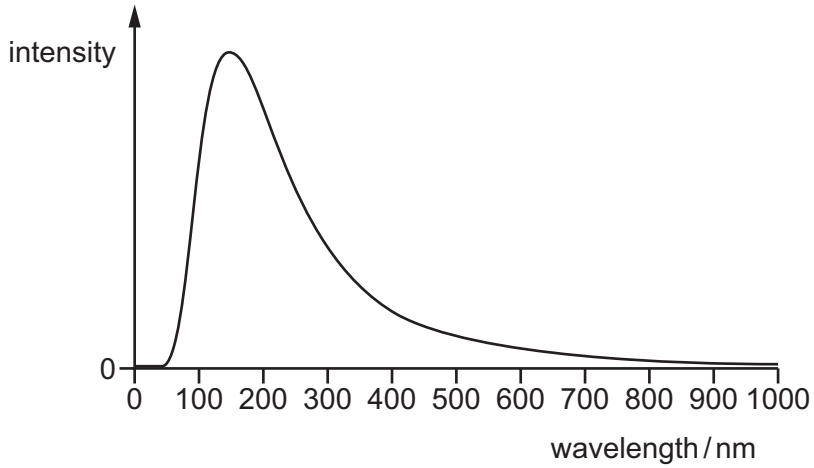
24 A source of sound of frequency 1000 Hz directly approaches a stationary observer. The observer measures the frequency of the received sound to be 1500 Hz. The speed of sound in still air is $330\,m\,s^{-1}$.

What is the speed of the source of sound?

A $110\,m\,s^{-1}$ **B** $165\,m\,s^{-1}$ **C** $220\,m\,s^{-1}$ **D** $330\,m\,s^{-1}$

25 The graph shows how the intensity of electromagnetic radiation emitted from a distant star varies with wavelength.



In which region of the electromagnetic spectrum is the radiation of greatest intensity?

A infrared

B visible light

C ultraviolet

D X-ray

26 Which statement concerning a stationary wave is correct?

A All the particles between two adjacent nodes oscillate in phase.

B The amplitude of the stationary wave is equal to the amplitude of one of the waves creating it.

C The wavelength of the stationary wave is equal to the separation of two adjacent nodes.

D There is no displacement of a particle at an antinode at any time.

27 Which waves would best demonstrate diffraction through a doorway?

A sound waves

B ultraviolet waves

C visible light waves

D X-rays