25 An electromagnetic wave is travelling through a vacuum.

What could be the wavelength and period of the electromagnetic wave?

	wavelength	period
A	1.2×10^{-10} Tm	2.5 Ms
B	1.2 pm	2.5×10^{11} Gs
C	1.2×10^2 pm	4.0×10^{-10} ns
D	1.2×10^3 μm	4.0 ns

26 Light of frequency 6.7×10^{14} Hz in a vacuum is incident normally on a diffraction grating that contains 4.0×10^5 lines m^{-1}.

What is the angle between the adjacent second and third order intensity maxima?

A   12°   **B**   21°   **C**   33°   **D**   54°

27 The siren of a moving police car emits a sound wave with a frequency of 440 Hz. A stationary observer hears sound of frequency 494 Hz. The speed of sound in the air is 340 m s^{-1}.

What could be the speed and the direction of movement of the car?

A   37 m s^{-1} directly away from the observer

B   37 m s^{-1} directly towards the observer

C   42 m s^{-1} directly away from the observer

D   42 m s^{-1} directly towards the observer

28 The diagram shows the shape at one instant in time of part of a stretched string as a wave travels along it from left to right.

What are the directions of the velocities of the points 1, 2 and 3 on the string at this instant in time?

	point 1	point 2	point 3
A	→	→	→
B	→	←	→
C	↑	↓	↑
D	↓	↑	↓