

- 24** An ambulance has a siren that emits sound of a constant frequency. The ambulance is moving directly towards a stationary observer.

The ambulance decelerates as it is approaching the observer and then accelerates after it has passed the observer.

How does the frequency of the sound heard by the observer change as the ambulance is approaching and as it is moving away from the observer?

	approaching observer	moving away from observer
A	decreases	decreases
B	decreases	increases
C	increases	decreases
D	increases	increases

- 25** Microwaves in a vacuum travel at speed X and have wavelength of order of magnitude Y .

What are the speed and a possible order of magnitude of wavelength of X-rays in a vacuum?

	speed	wavelength
A	X	$10^{-8} Y$
B	X	$10^{-4} Y$
C	$10^4 X$	Y
D	$10^8 X$	Y