

Answer on this page if possible. 2 marks each, don't forget your units of measure.

1. A pendulum is swinging with a period of 0.265 s.

What is the **frequency** of the pendulum?

2. A wave on a lake has a cycle (wave) length of 0.740 m and a period of 0.380 s.

What is the **speed** of the wave?

3. A wave has a frequency of 0.45 Hz and a cycle (wave) length of 8.0 m.

What is the wave **speed**?

4. A string has a mass of 0.220 kg and a length of 1.40 m.

What is the **linear density**, μ , of the string (include units)?

5. A string has a tension of 120.0 N and a wave speed of 45.0 m/s when it is plucked.

What is the **linear density** of the string (include units)?

6. The weather forecaster says the high temperature today is going to be 21 °C. What will the speed of sound be when the temperature reaches the day's high?

7. An airline passenger jet is traveling at a cruising speed of 915 km/h. If the local speed of sound is 314 m/s, what is the Mach number of the jet?

8. A tuning fork resonates with the note E. If the sound wave has a wavelength of 82 cm and a wave speed of 540 m/s, what is the frequency of the note E?

9. The speed of sound in water is approximately 1496 m/s. Theoretically, how hot would air need to be to have the same speed of sound as water?