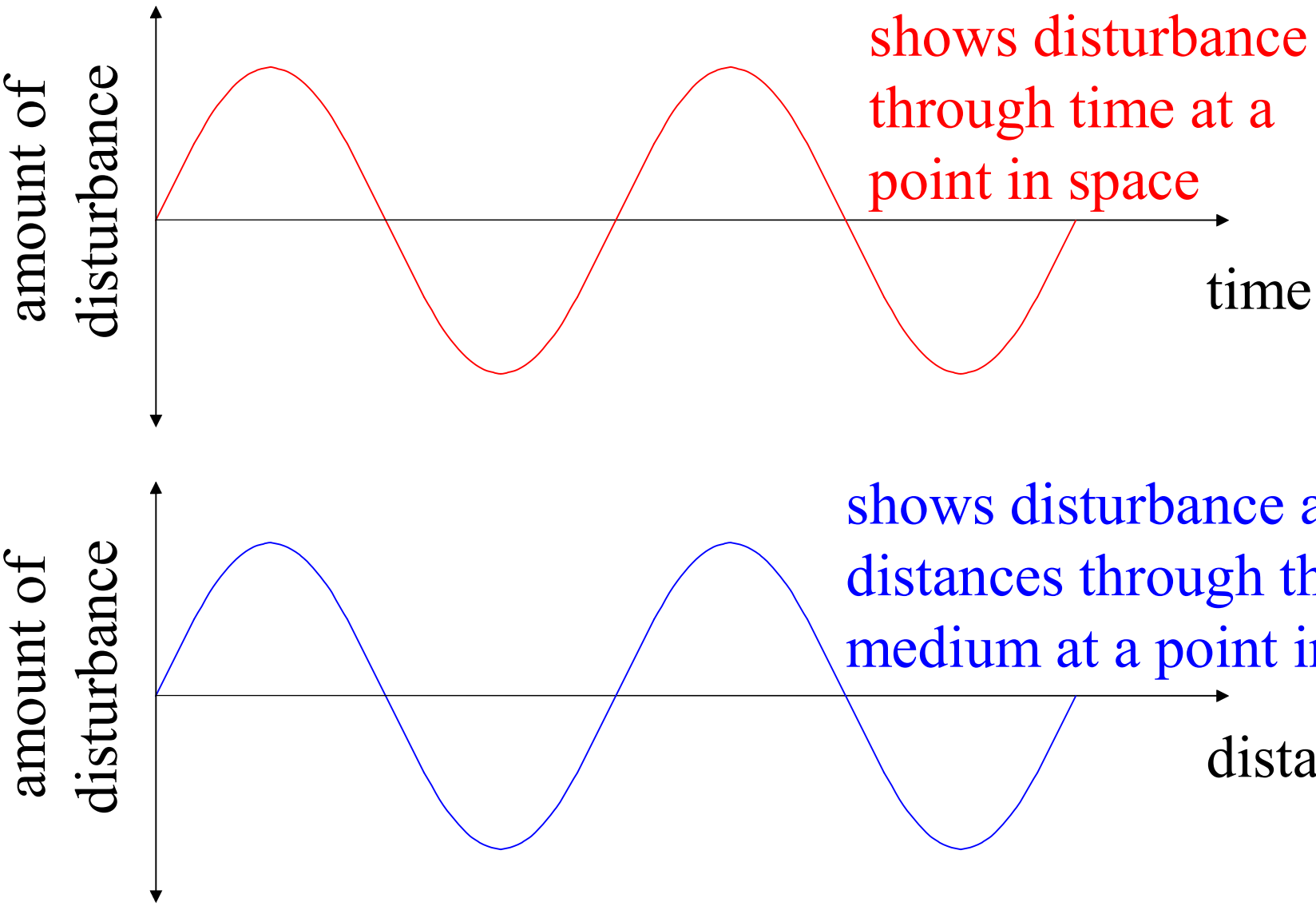
Graphs of Waves

Revealing the Shape of the Wave

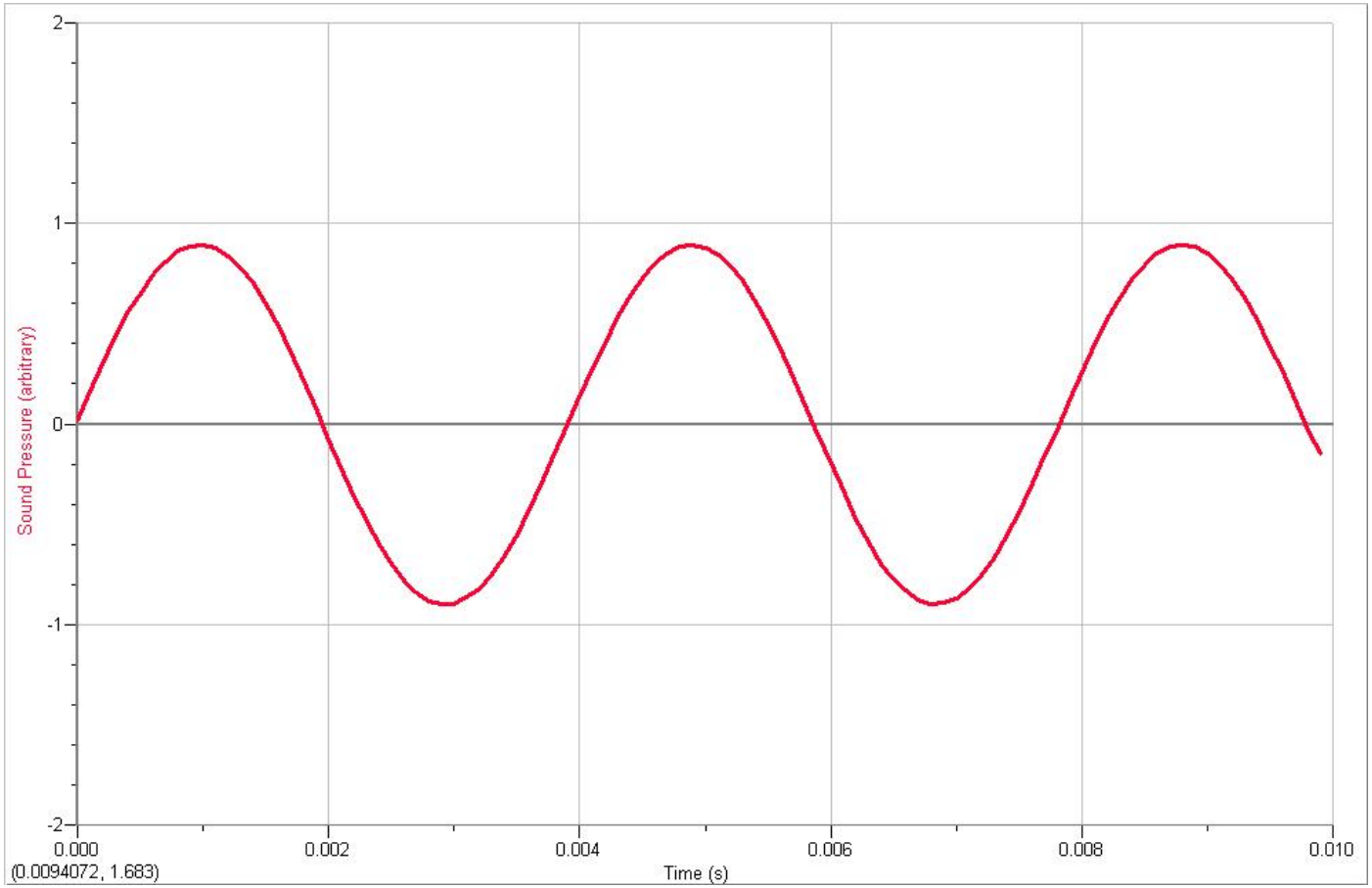
Wave Graphs

- Aside from wavelength, frequency, speed, and amplitude a wave can be unique in its shape or form.
- The shape or form of the wave is the pattern of disturbance.
- A common type of pattern is a sinusoidal wave (or more simply a "sine wave"). This is a wave pattern that has the same curved shape as the graph of the sine function.

Two Types of Wave Graphs

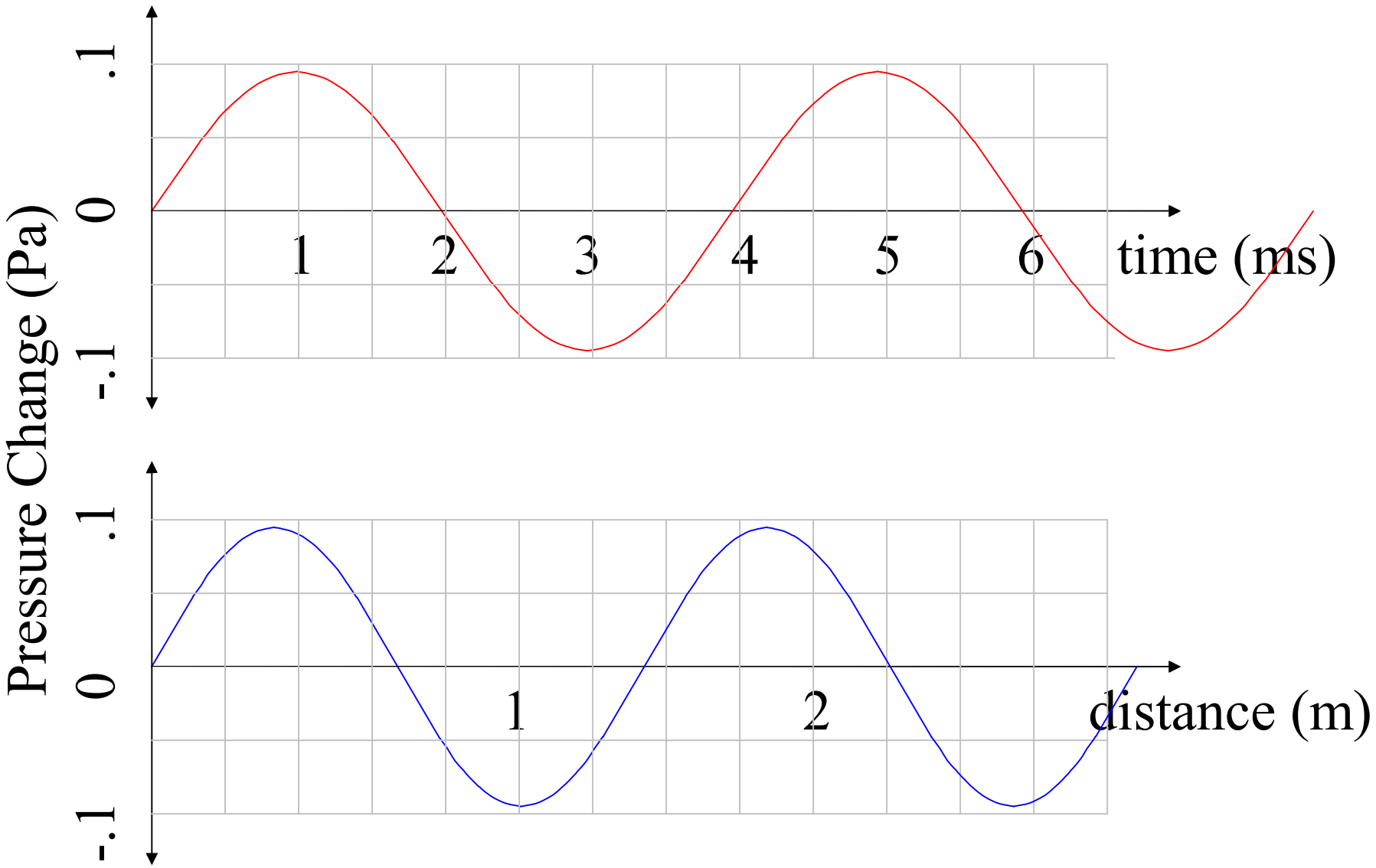


Graph of Sound Wave Made by Tuning Fork:



This is the output of an **oscilloscope**. An oscilloscope displays voltage vs. time – in this case the voltage output of a microphone.

Example – Find the Parameters A, f, T, λ, v



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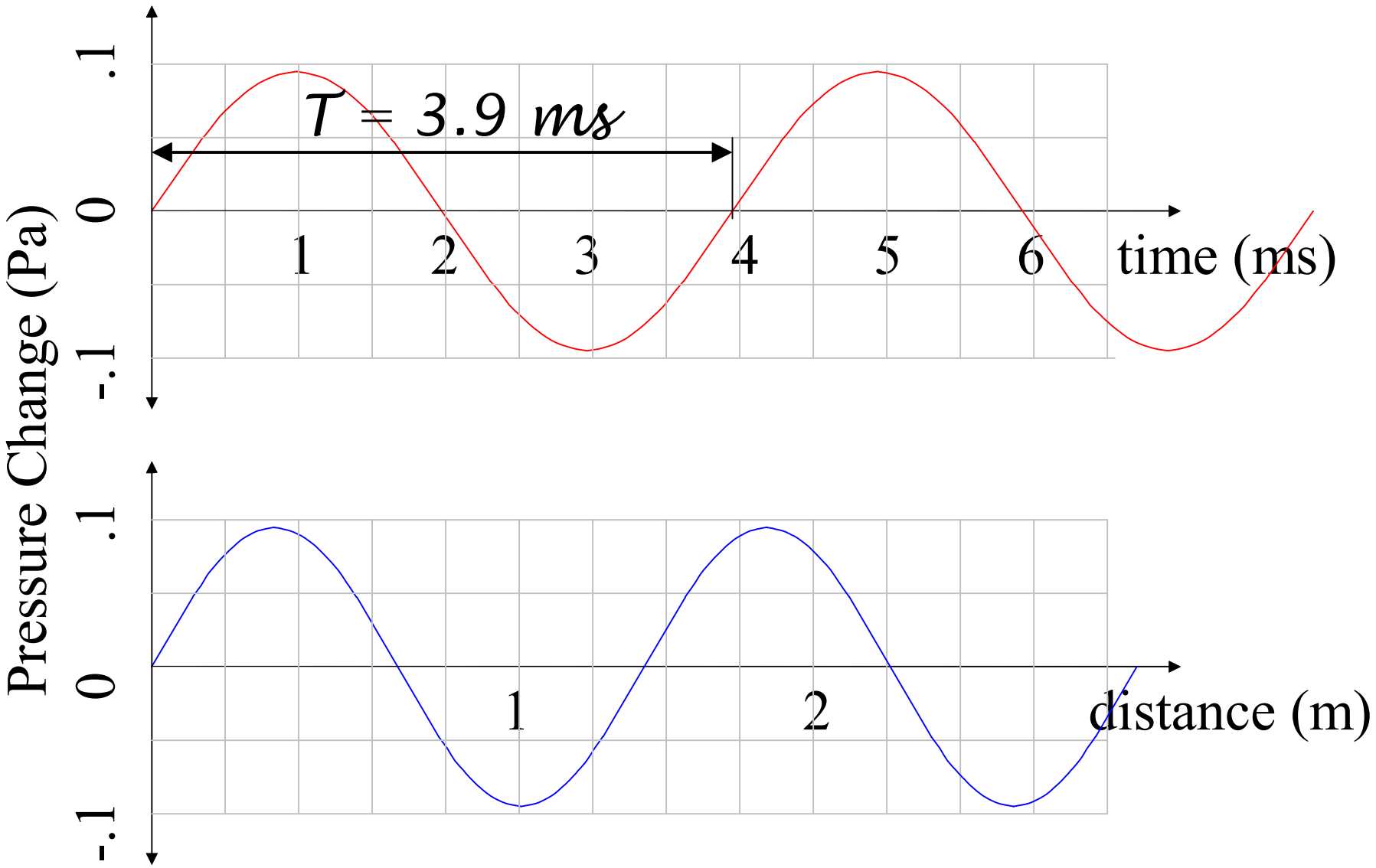
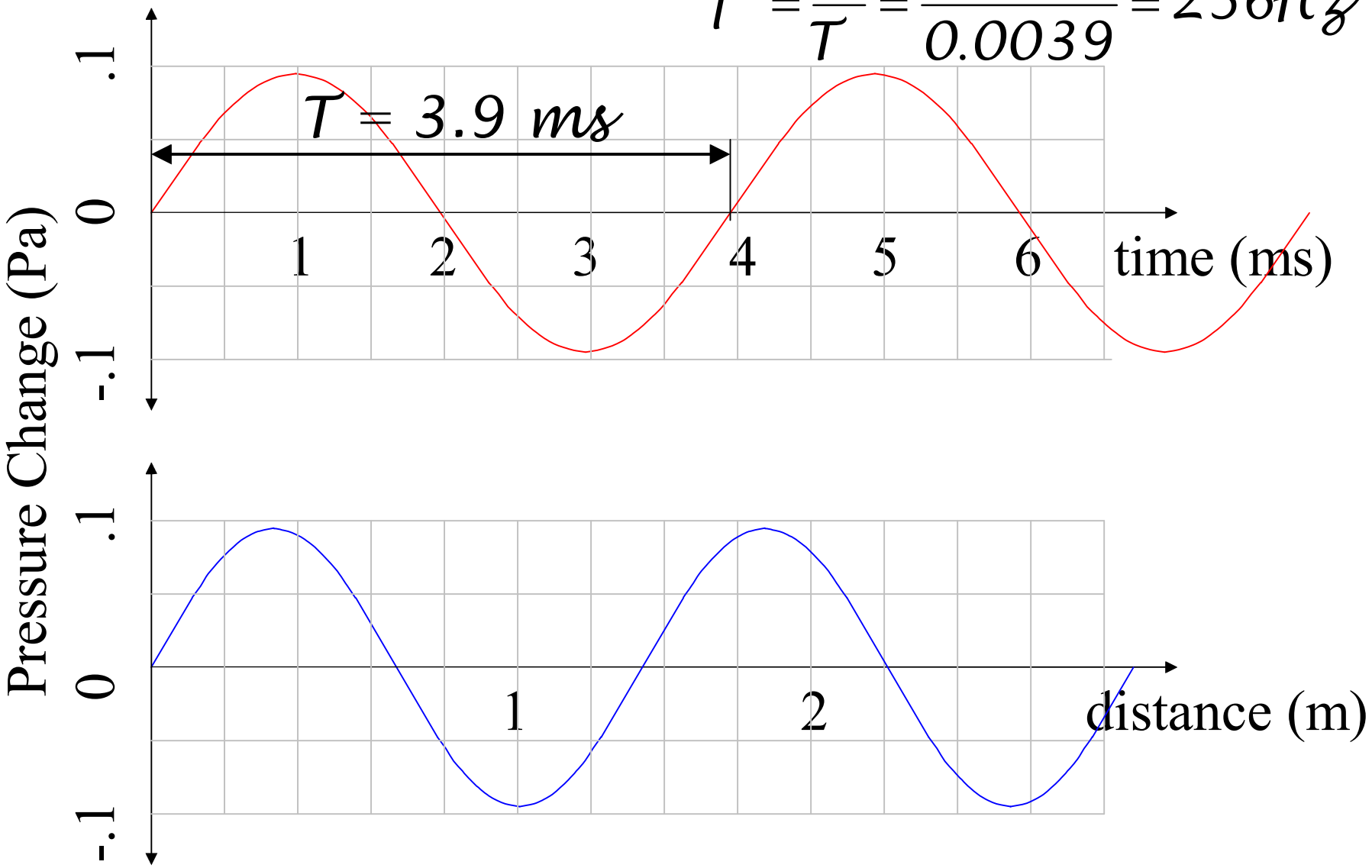


Find the Parameters A, f, T, λ, v:

$$f = \frac{1}{T} = \frac{1}{0.0039} = 256 Hz$$



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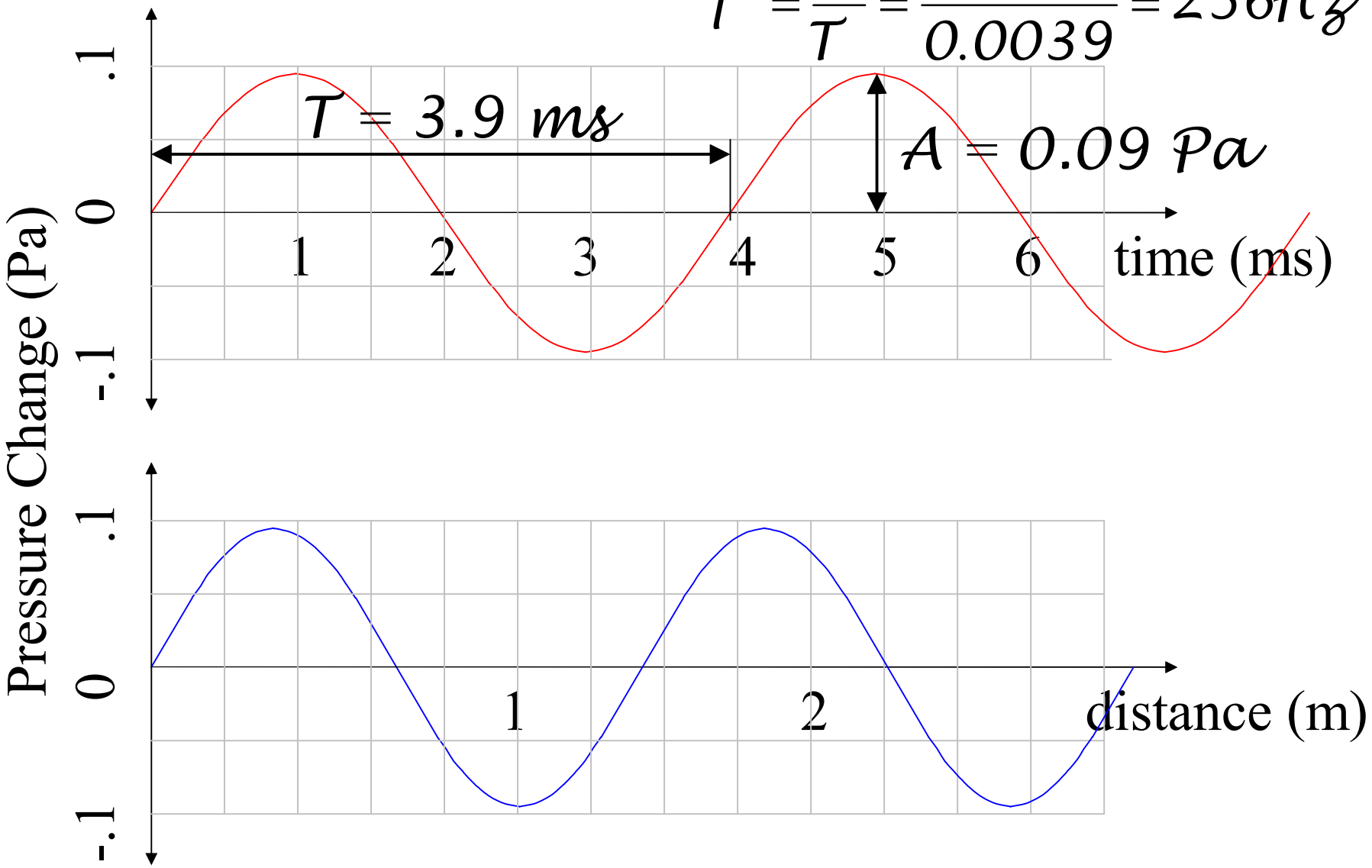

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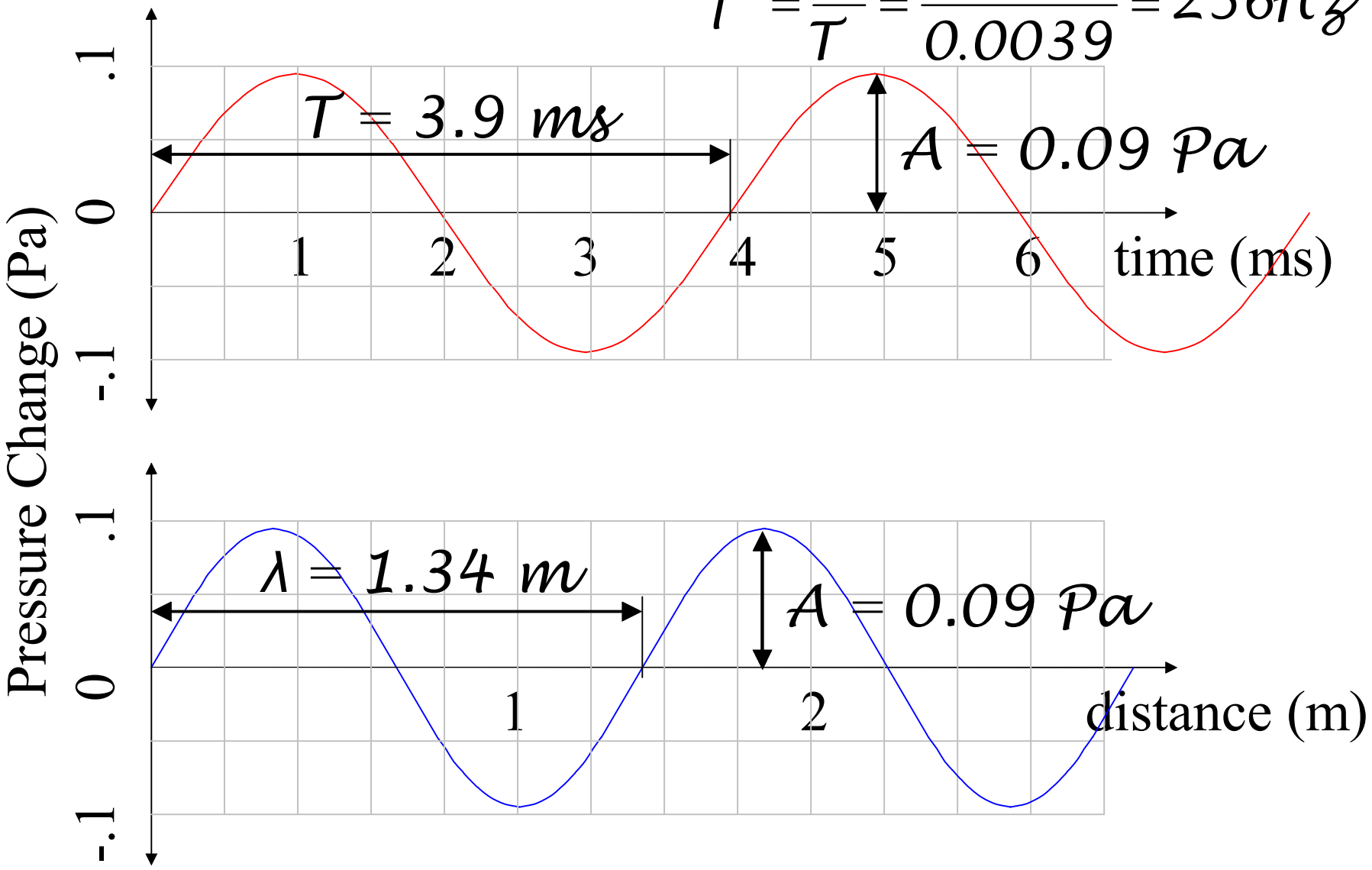

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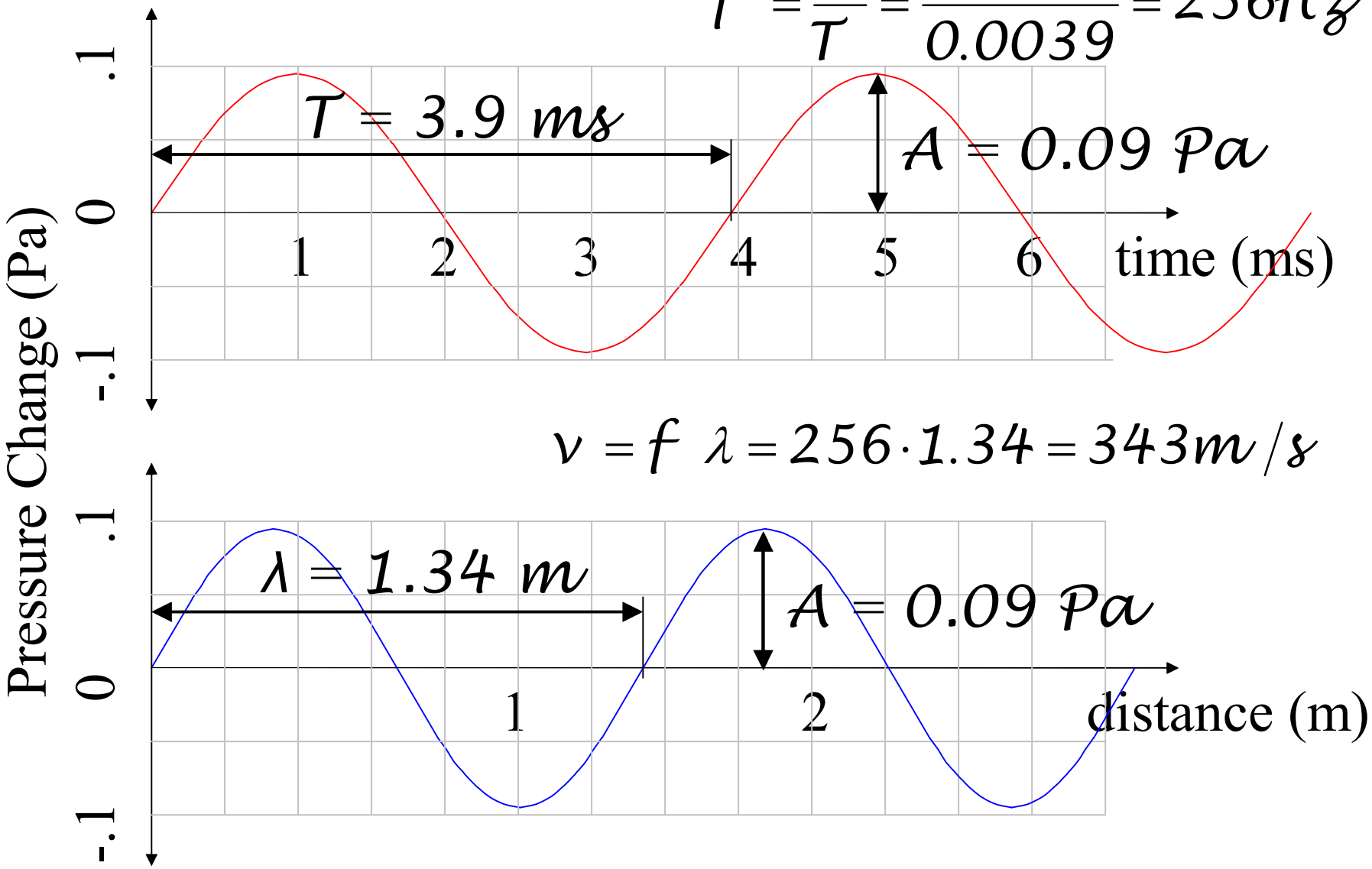

$$v = f\,\lambda = 256 \cdot 1.34 = 343 m/s$$

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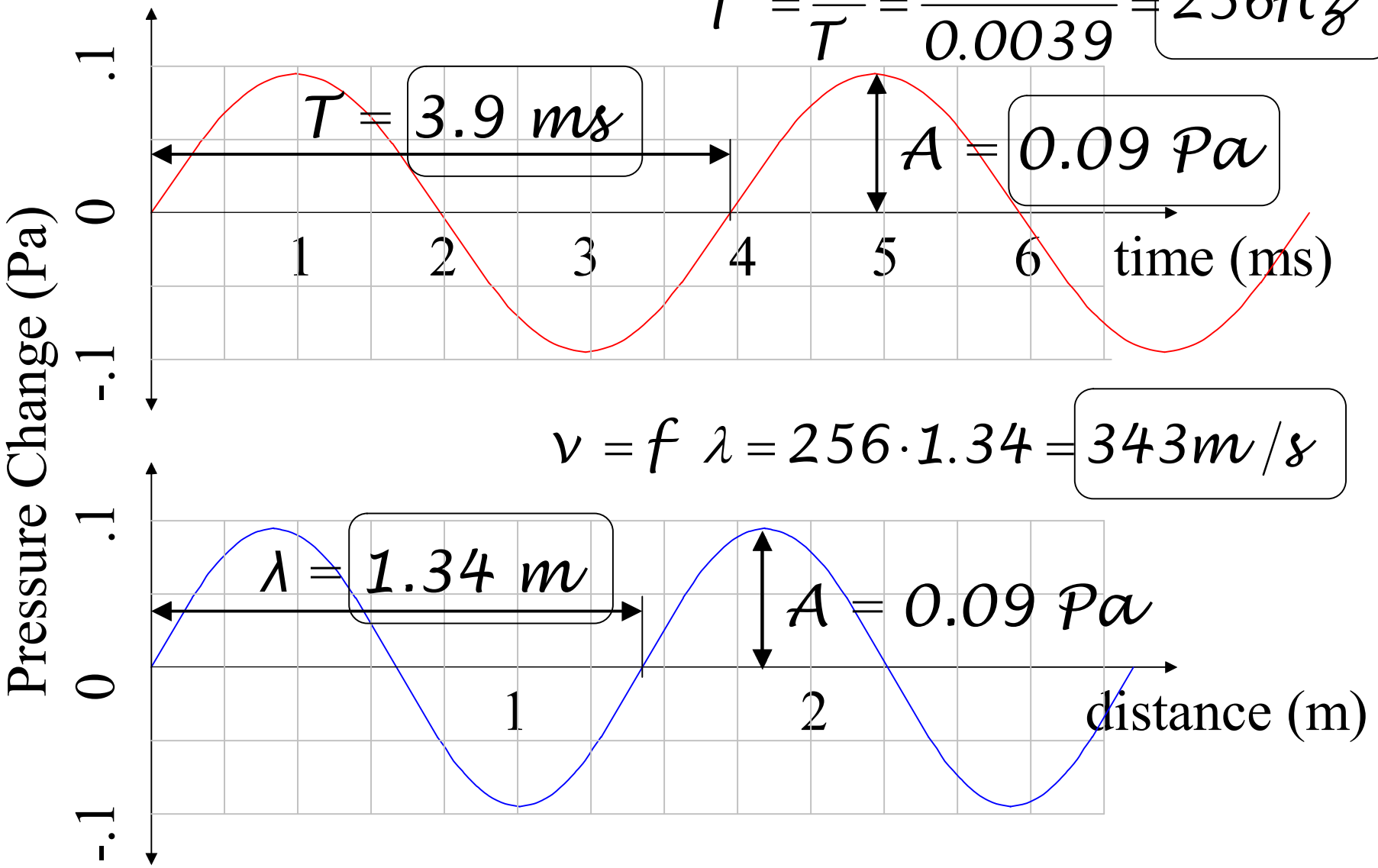

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