May 1, Week 15

Today: Chapter 14 and 15: Pendulums and Waves

Homework Assignment #11 - Due May 3.

Mastering Physics: 7 questions from chapters 13 and 14.

Mastering Physics: 13.77

Exam score is on white sheet of paper

Final Exam: Wednesday, May 8, 10:00AM in 103, Regener Hall

Thursday office hours in 109, Regener Hall

Engineering Student Services is doing a Physics I review tomorrow from 11:00-2:00pm

Review

When works best for you to have a review?

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When works best for you to have a review?

(a) Monday Morning

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When works best for you to have a review?

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(b) Monday Afternoon

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(c) Tuesday Morning

(d) Tuesday Afternoon

(e) I don't need a review

Pendulum

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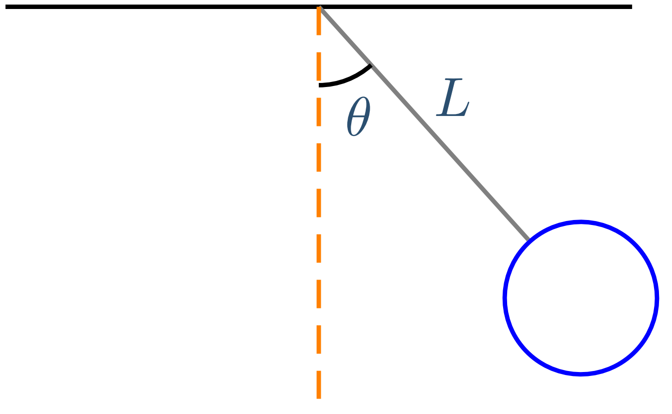

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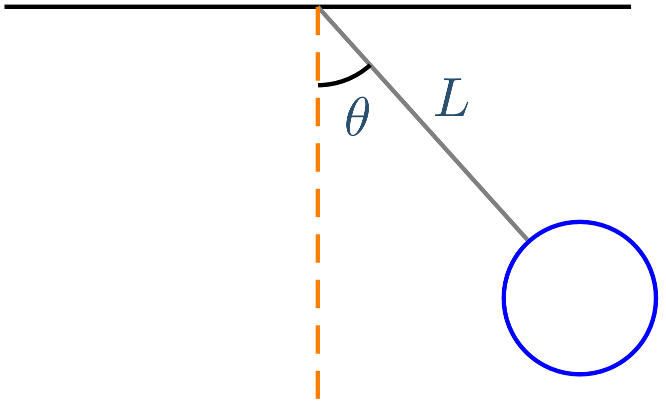

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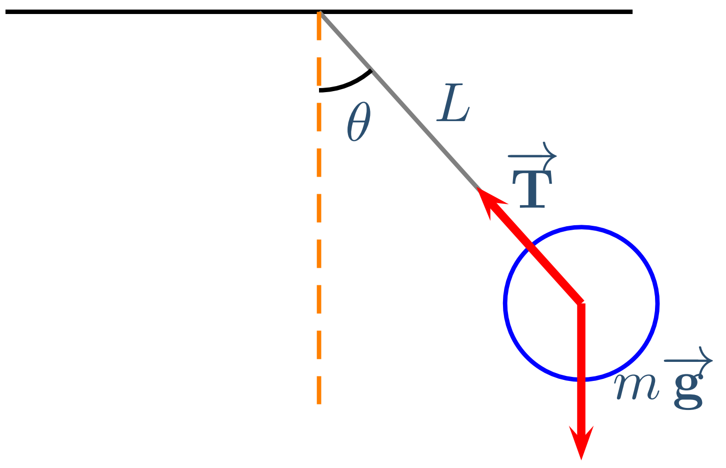

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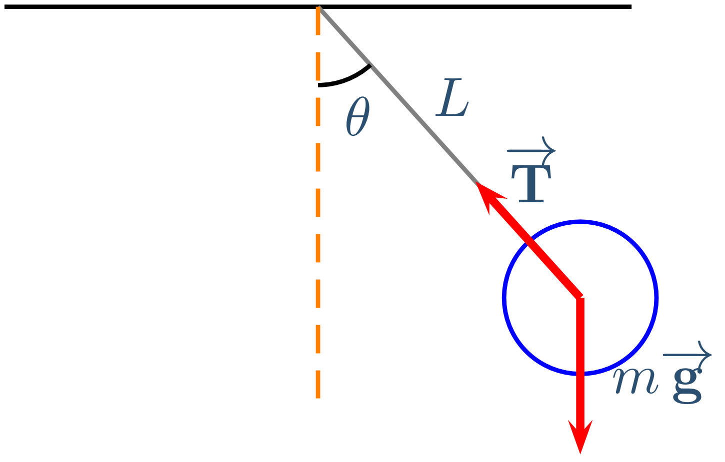

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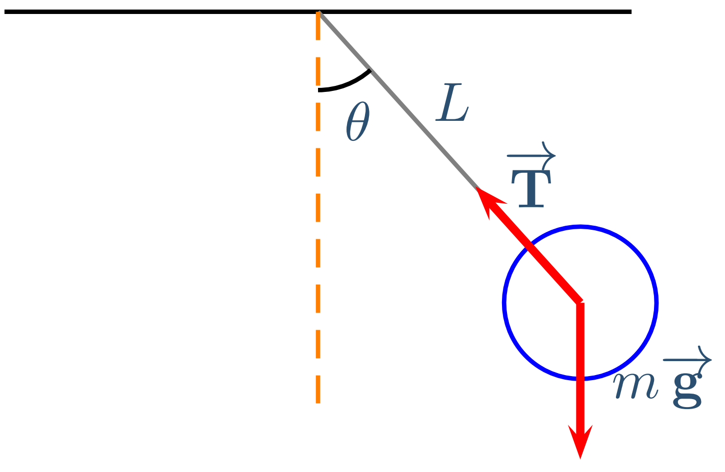

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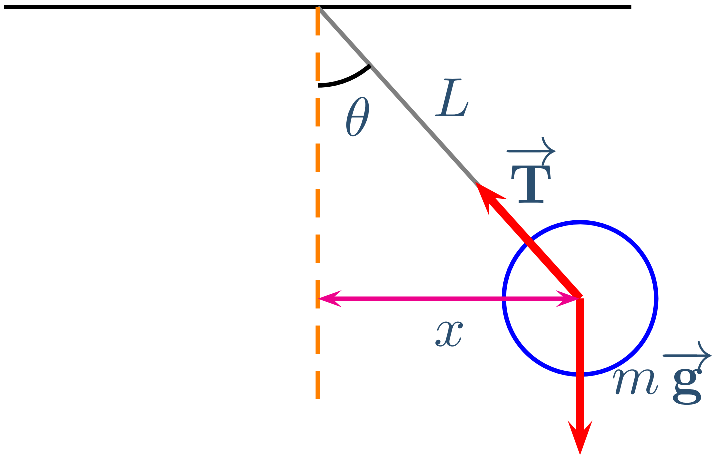

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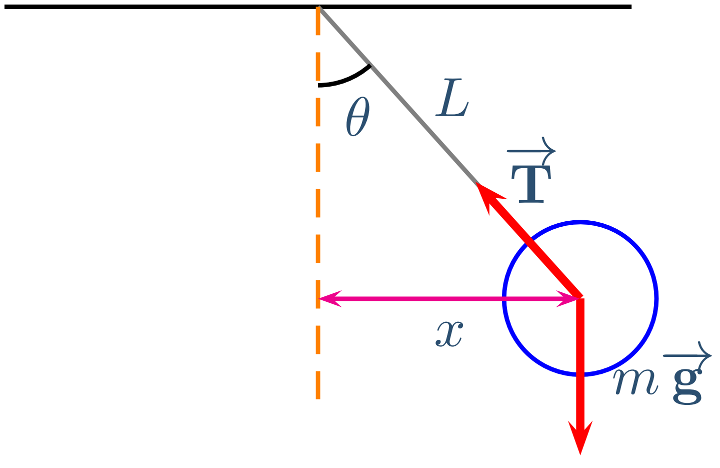

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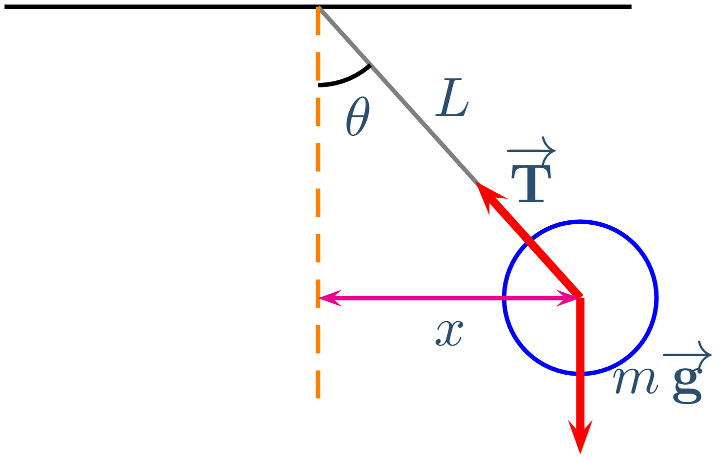

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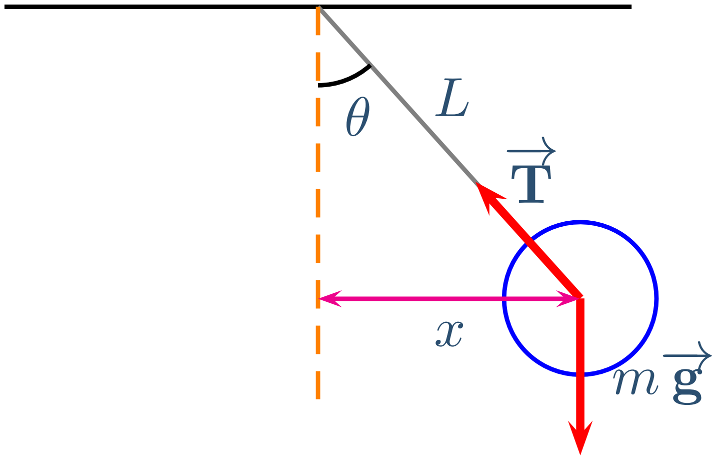

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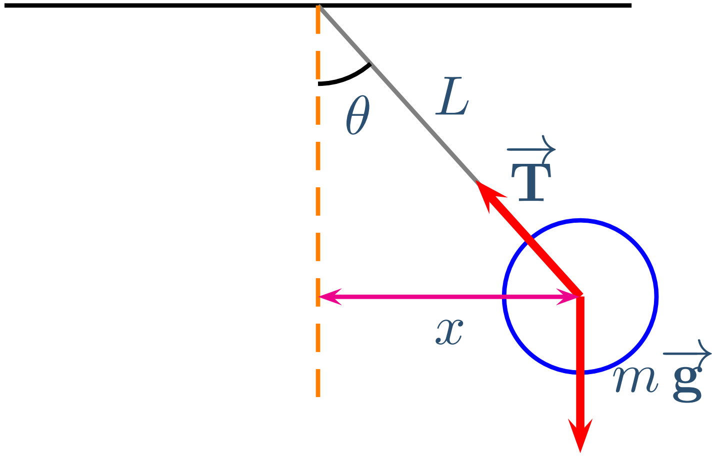

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True equation for pendulum

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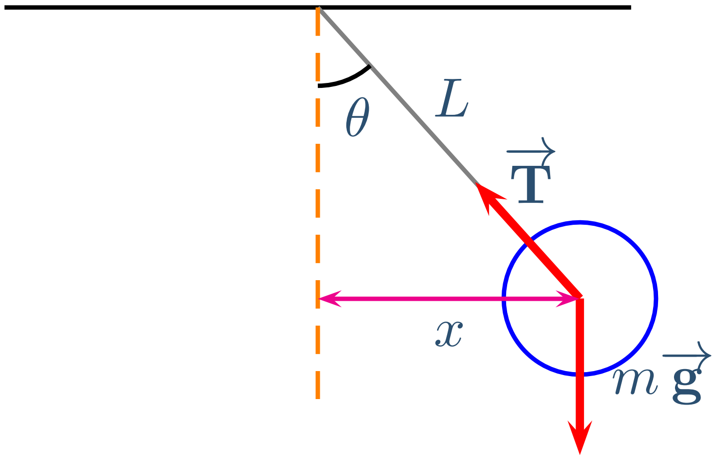

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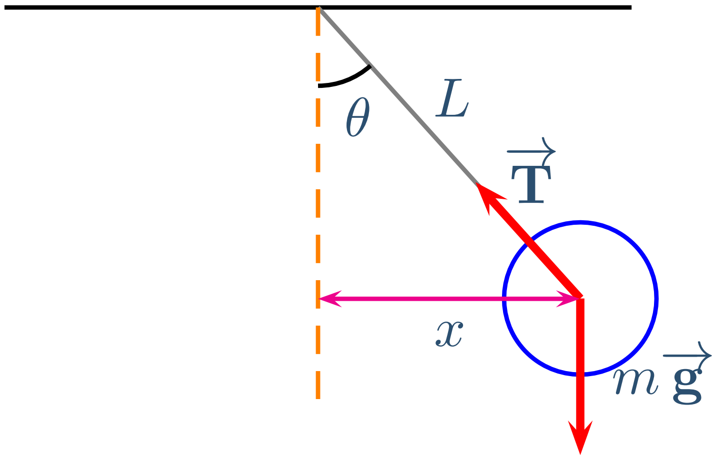

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Small Angle Approximation: For $\theta \lesssim 25^\circ = 0.44\,rad$, $\boxed{\sin\theta \approx \theta}$

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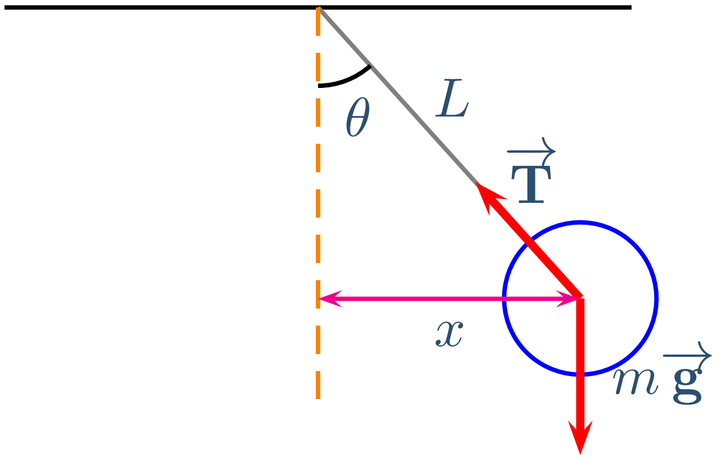

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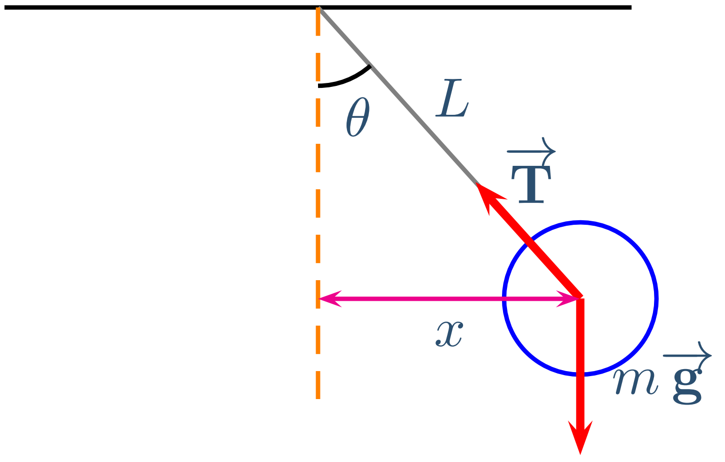

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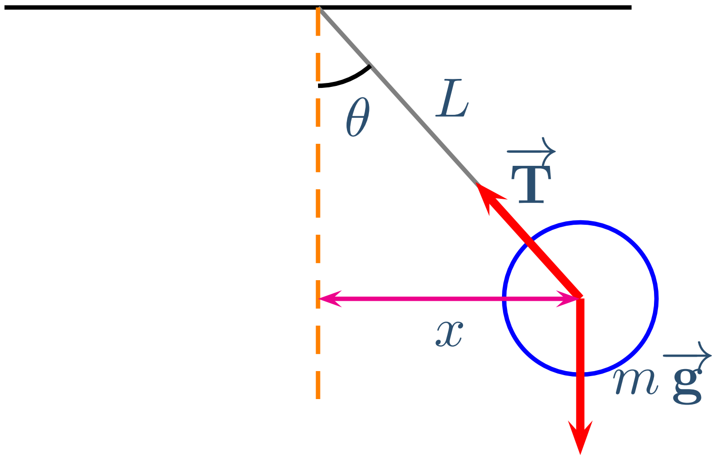

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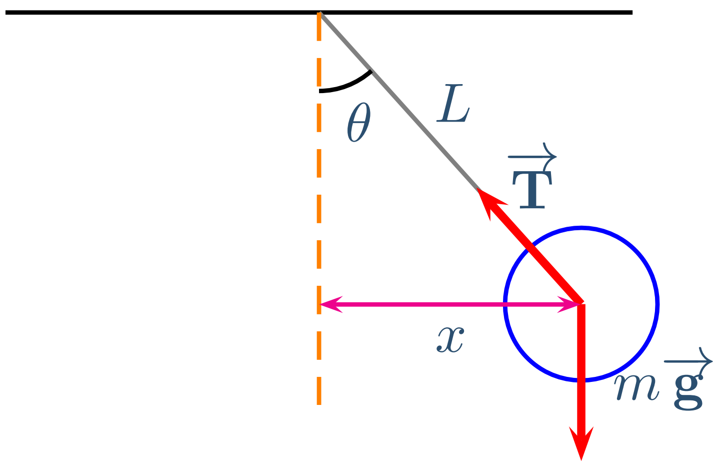

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- Longitudinal Waves - Energy propagates parallel to medium’s oscillation
- Rolling Waves - A combination of transverse and longitudinal

Sinusoidal Waves

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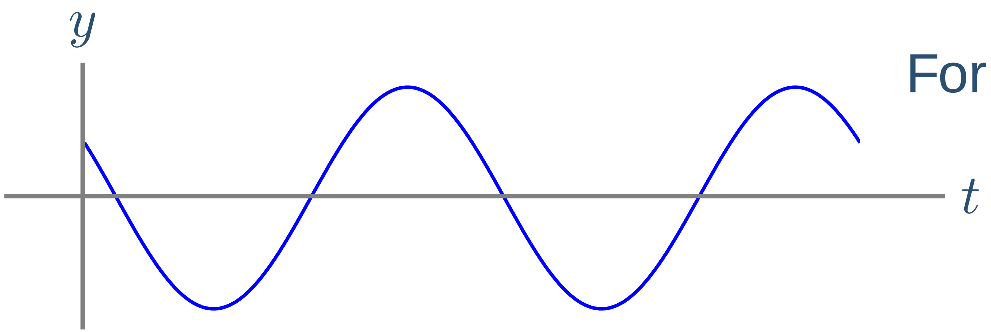

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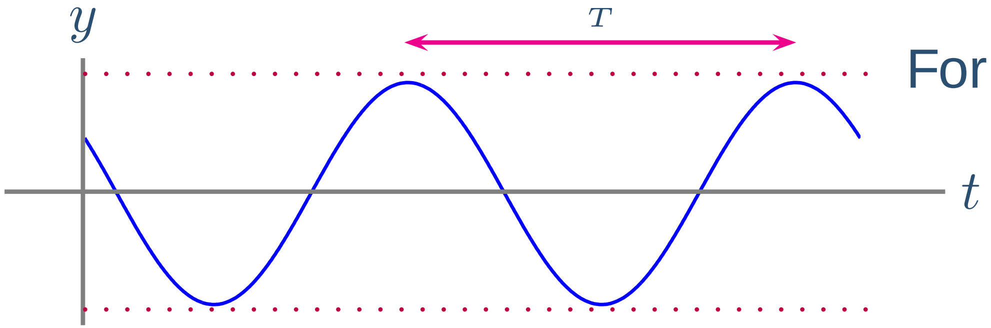

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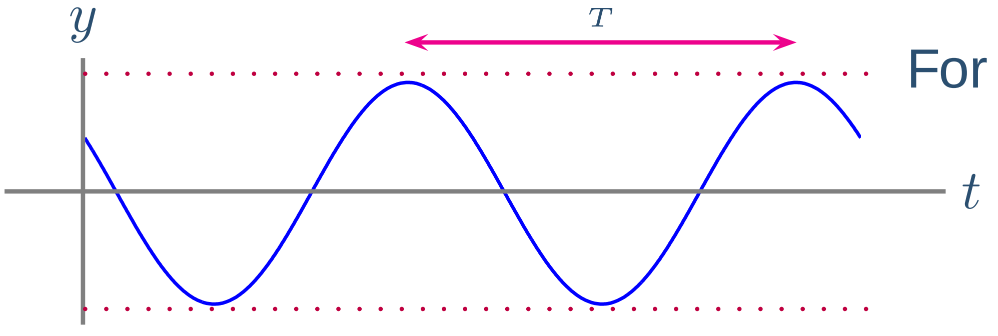

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For a nearby point

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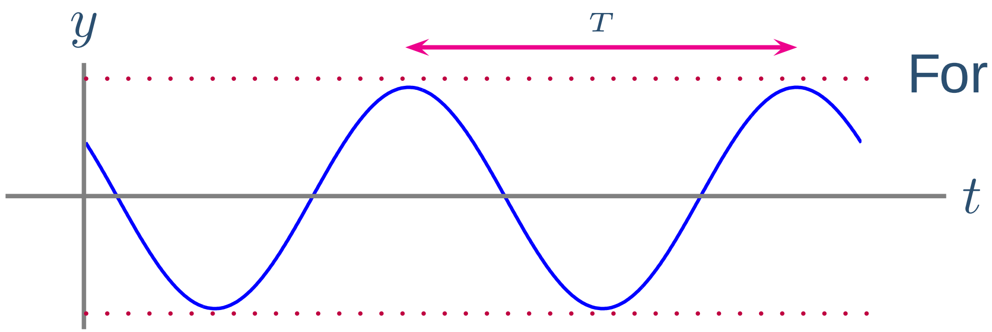
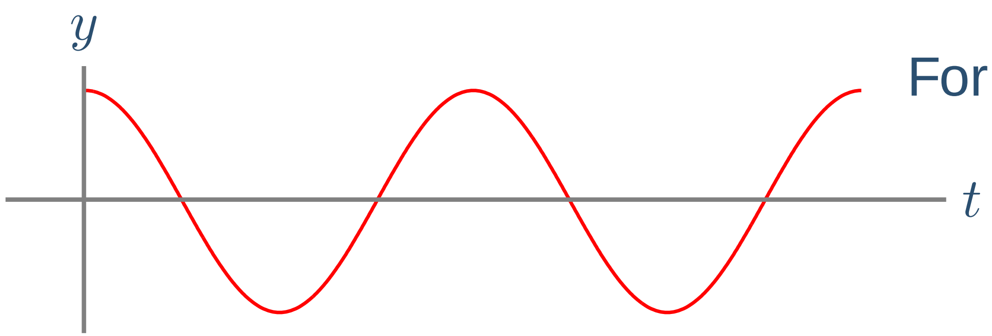


For a point on the medium



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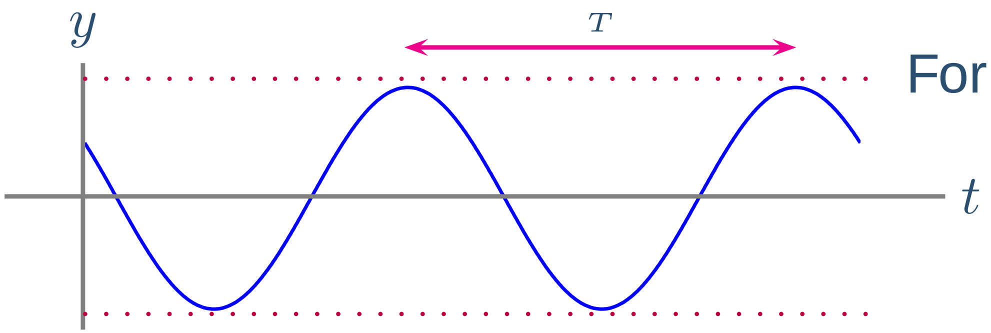

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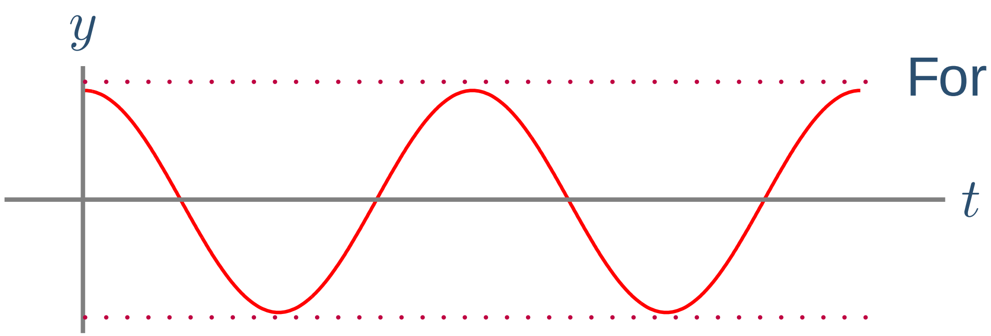

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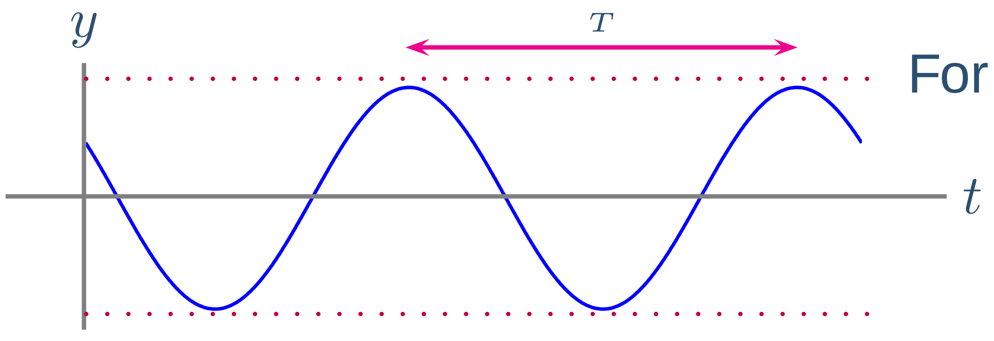

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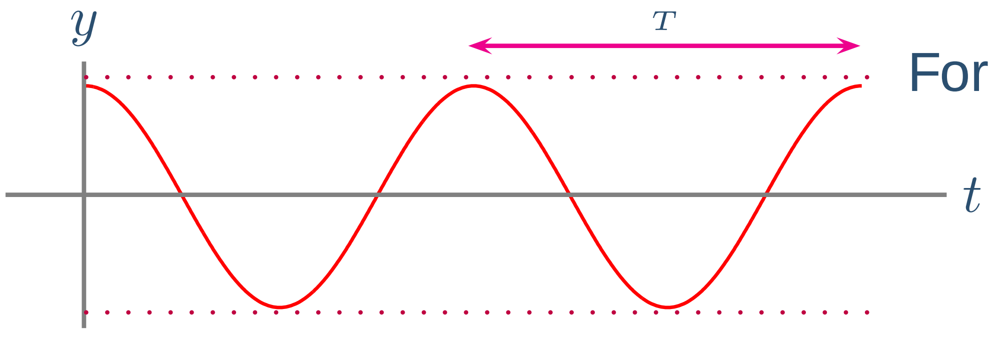

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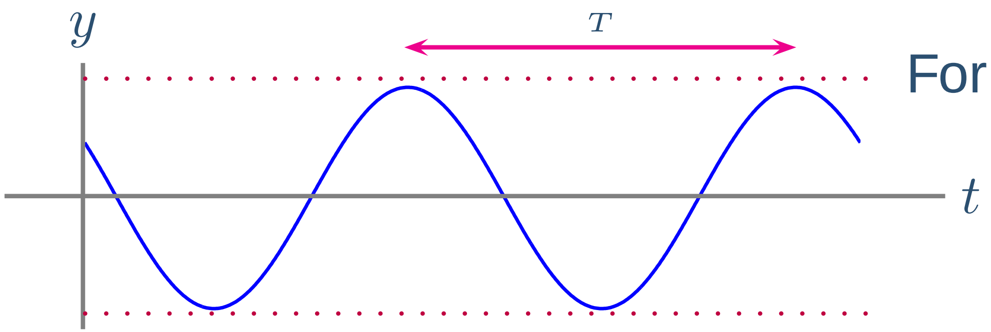

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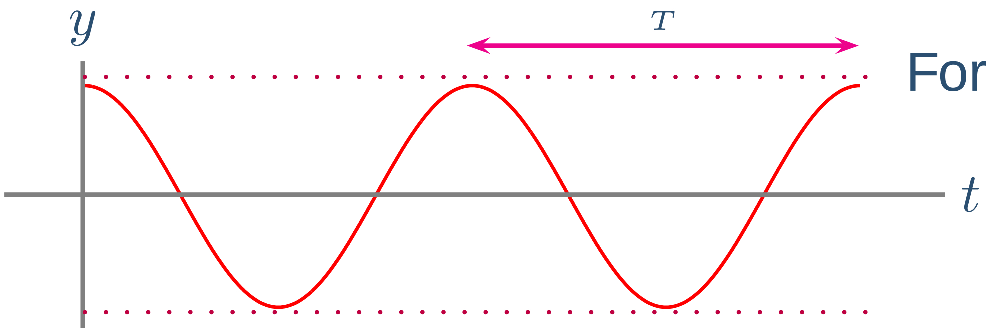

For a nearby point

All points on the medium have the same period

Wavelength

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For one instant of time!

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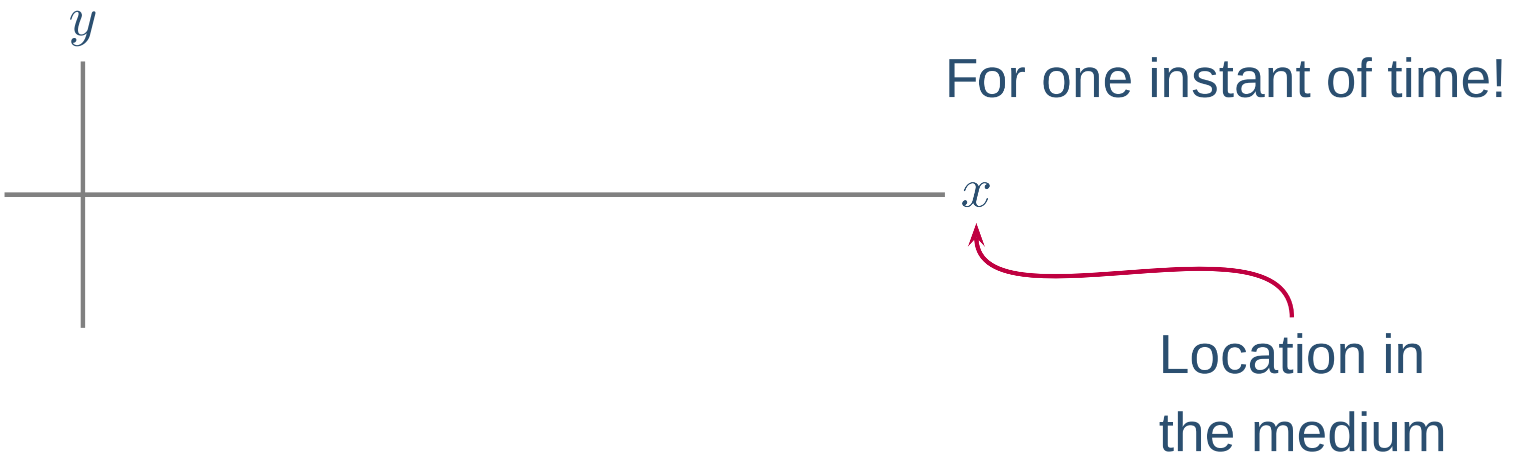

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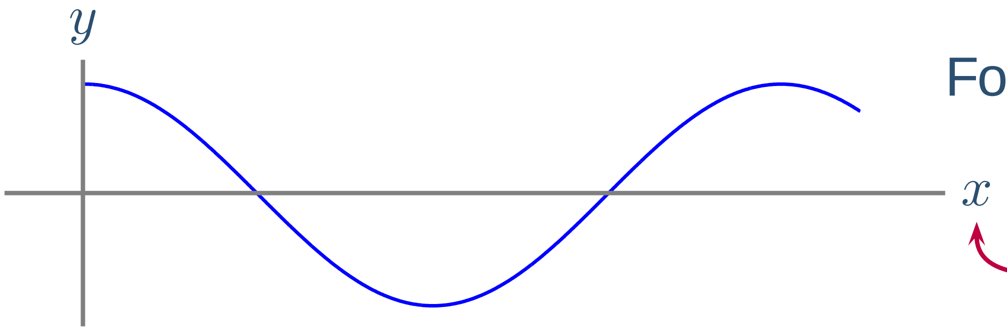

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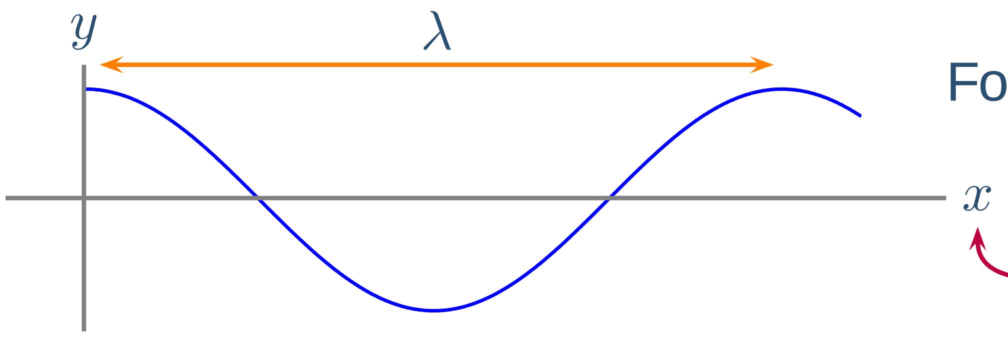

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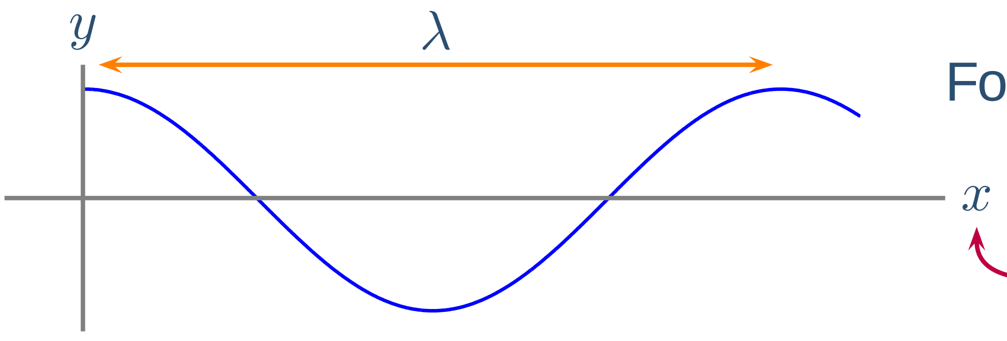

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Wavelength: λ Units: m

- Distance between points in the medium that are in phase