

**Problem 2.**

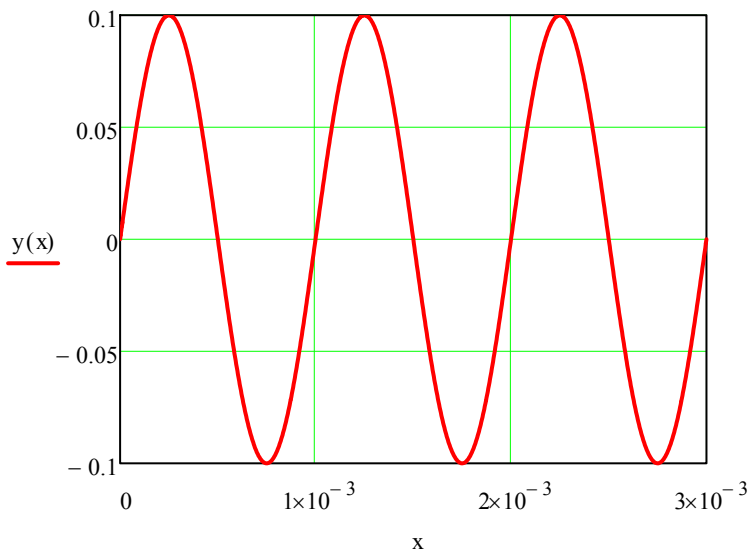
Plot three oscillations of a sinusoidal displacement function with the following conditions,

- a. Displacement amplitude of 0.1m.
- b. frequency is 10Hz.
- c. Time step is 0.001 seconds.

Amplitude

$$A := 0.1$$

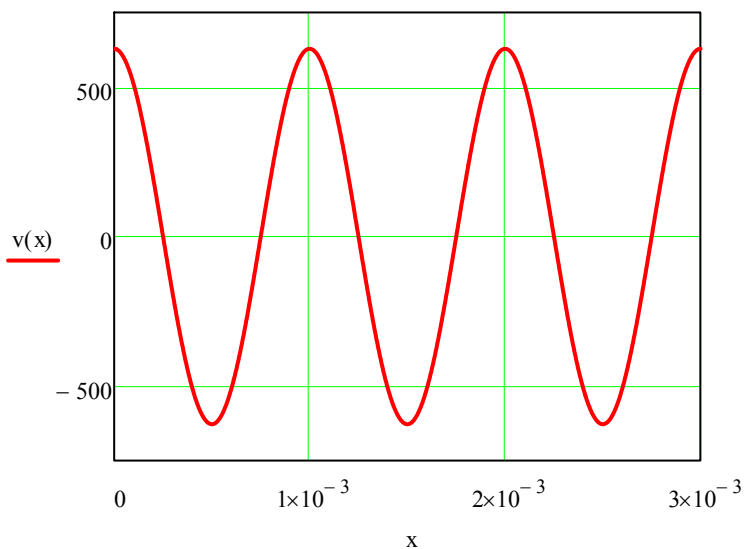
$$y(x) := A \cdot \sin\left(\frac{2 \cdot \pi}{0.001} \cdot x\right)$$

**Problem 3.**

Velocity graph

Velocity

$$v(x) := \frac{d}{dx}y(x)$$

**Problem 4.**

Legends are already added to the plots