

$$mass := 0.5 \text{ kg} \quad F := 100 \text{ N} \quad a := 2 \text{ m} \quad k := \frac{F}{a} = 50 \frac{\text{N}}{\text{m}}$$

$$\omega_0 := \sqrt{\frac{k}{mass}} = 10 \frac{1}{\text{s}} \quad T := \frac{2 \cdot \pi}{\omega_0} = 0.628 \text{ s} \quad \nu := \frac{1}{T} = 1.592 \frac{1}{\text{s}}$$

$$B := 300 \quad x := 1 \quad t := 0 \text{ s}$$

Define outside of the solve block. Otherwise the variables are visible inside the block only

$$A := 3$$

$$x = A \cdot \cos(\omega_0 \cdot t) + B \cdot \sin(\omega_0 \cdot t)$$

$$A := \text{find}(A)$$

clear(t)

$$x(t) := A \cdot \cos(\omega_0 \cdot t) + B \cdot \sin(\omega_0 \cdot t)$$

$$x(1 \text{ ms}) = 4$$

$x(t) \rightarrow ?$ The function can't be used symbolically because you can't evaluate solve blocks symbolically in Prime (a is not defined for the symbolics)

Here is a workaround

$A := A = 1$ Now the symbolics use the result after the = and forgets about the solve block

$$x(t) := A \cdot \cos(\omega_0 \cdot t) + B \cdot \sin(\omega_0 \cdot t)$$

$$x(1 \text{ ms}) = 4$$

$$x(t) \rightarrow \cos\left(\frac{10 \cdot t}{\text{s}}\right) + 300 \cdot \sin\left(\frac{10 \cdot t}{\text{s}}\right)$$

$$\frac{d}{dt} x(t) \xrightarrow{\text{simplify}} \frac{3000 \cdot \cos\left(\frac{10 \cdot t}{\text{s}}\right) - 10 \cdot \sin\left(\frac{10 \cdot t}{\text{s}}\right)}{\text{s}}$$

If you want full symbolics,
clear the variables for
symbolic use:

`clearsym(ω_0, A, B)`

$$x(t) := A \cdot \cos(\omega_0 \cdot t) + B \cdot \sin(\omega_0 \cdot t)$$

$$\frac{d}{dt} x(t) \xrightarrow{\text{simplify}} \omega_0 \cdot B \cdot \cos(\omega_0 \cdot t) - \omega_0 \cdot A \cdot \sin(\omega_0 \cdot t)$$