

1	$f(x) := \text{LøsODE}[1000 y'' + 20000 y' + 100000 y = 0]$ <input checked="" type="radio"/> $\rightarrow f(x) := c_7 e^{-10x} + c_8 x e^{-10x}$
2	$f(0) = 0.3$ <input type="radio"/> $\rightarrow c_7 = \frac{3}{10}$
3	$f'(0) = 0$ <input type="radio"/> $\rightarrow -10 c_7 + c_8 = 0$
4	$\{\$2, \$3\}$ <input type="radio"/> Løs: $\left\{ \left\{ c_7 = \frac{3}{10}, c_8 = 3 \right\} \right\}$
5	$g(x) := 0.3 \exp(-10 x) + 3 x \exp(-10 x)$ <input checked="" type="radio"/> $\rightarrow g(x) := \frac{3}{10} e^{-10x} + 3 x e^{-10x}$
6	$h(x) := \text{LøsODE}[1000 y'' + 10000 y' + 100000 y = 0]$ <input checked="" type="radio"/> $\rightarrow h(x) := c_8 e^{-5x} \cos(\sqrt{3} \cdot 5 x) + c_7 e^{-5x} \sin(\sqrt{3} \cdot 5 x)$
7	$h(0) = 0.3$ <input type="radio"/> $\rightarrow c_8 = \frac{3}{10}$
8	$h'(0) = 0$ <input type="radio"/> $\rightarrow \sqrt{3} \cdot 5 c_7 - 5 c_8 = 0$
9	$\{\$7, \$8\}$ <input type="radio"/> NLøs: $\{c_7 = 0.17, c_8 = 0.3\}$

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$$i(x) := \exp(-5x) (0.3 \cos(\sqrt{3} 5x) + 0.17 \sin(\sqrt{3} 5x))$$



$$\approx \mathbf{i(x) := 0.3 e^{-5x} \cos(8.66 x) + 0.17 e^{-5x} \sin(8.66 x)}$$

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