ODE Analyzer Assistant

Differential Equations

$$\frac{d^2}{dt^2}Uuit(t) + 2\left(\frac{d}{dt}Uuit(t)\right) + Uuit(t) = 10\,sin(4\,t)$$

Edit...

Conditions

$Uuit(1) = 5$
$Uuit'(0) = -2$

Edit...

Parameters

Edit...

Solve Numerically | Solve Symbolically | Classify | Help | Quit

Solve Numerically

Parameters

- Runge-Kutta-Fehlberg 4-5th order
- Cash-Karp 4-5th order
- Dverk 7-8th order [interpolant]
- Gear single step extrapolation [rational]
- Rosenbrock stiff 3-4th order
- Livermore stiff [adams iterative]
- (•) Boundary Value Problem solver

[trapezoidal] [richardson extrapolation]

Range of t: 0 to 1

- Taylor series [lazy series]
- Modified Extended BDF Implicit
- Fixed step methods

[.5e-2] [forward Euler]

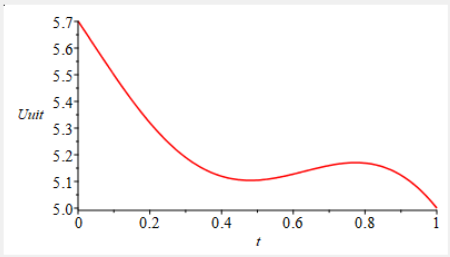
Absolute: 1.000000e-06 default

Relative: default

Output

Show function values at t = 0.500000

Solve | Plot | Plot Options



Show Maple commands

On Quit, Return [Plot]

Clear | Help | Back | Quit

Solve Symbolically

Method

(•) Default

- [x] Use Lie Methods
- [x] Use Classification Methods

Integrate [auto]

Explicit [auto]

- Transforms [laplace]
- Truncated Series, order = 6
- Formal Series [default]

Expansion point

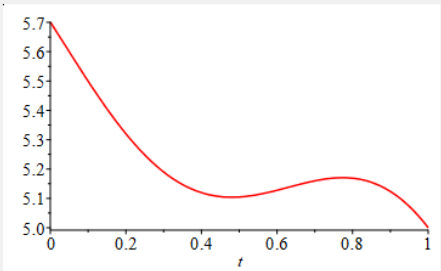
Show Maple commands

Output

Solve | timelimit (s) = 60 | Large Display

$$Uuit(t) = \frac{1}{578}\,\frac{1}{e^{-1}}\left(e^{(-t)}\left(-22\,e^{-1} + 80\,cos(4) + 150\,sin(4) + 1445\right)\right) + \frac{1}{578}\,\frac{1}{e^{-1}}\left(e^{(-t)}\,t\left(22\,e^{-1} + 150\,sin(4) + 80\,cos(4) + 1445\right)\right) - \frac{80}{289}\,cos(4\,t) - \frac{150}{289}\,sin(4\,t)$$

Plot | Plot Options



On Quit, Return [Solution]

Clear | Help | Back | Quit