

Group:A/B/C	No (in list)	Student ID	Full Name (Surname, Name)	HW
				07

Use the indicated method to approximate the solutions to the initial-value problems

$$y' = t^{-2}(\sin 2t - 2ty), \quad 1 \leq t \leq 2, \quad y(1) = 2, \quad h = 0.1;$$

actual solution

$$y(t) = \frac{1}{2}t^{-2}(4 + \cos 2 - \cos 2t),$$

and compare the results to the actual values.

1. Runge-Kutta third-order method.
2. Heun's third-order method.
3. Ralston's third-order method.
4. Third-order Strong Stability Preserving Runge-Kutta.