Numerical Methods (MATH2300 PP)

Question 1
Not yet answered
Marked out of 1.00
Flag question

Which of the following methods is the best for solving initial value problems:

Select one:

- (selected) a. Euler's method
- b. Modified Euler's method
- c. Runge-Kutta method of the fourth order
- d. Taylor's series method

Clear my choice

Question 2
Not yet answered
Marked out of 1.00
Flag question

The iterative formula of Euler's method for solving $y' = f(x, y)$ with $y(x_0) = y_0$, is

Select one:

- a. $y_{n+1} = y_n + hf(x_{n+1}, y_{n+1})$
- (selected) b. $y_{n+1} = y_n + hf(x_n, y_n)$
- c. $y_{n+1} = y_n + \frac{h}{2} f(x_n, y_n)$
- d. $y_{n+1} = y_n - hf(x_n, y_n)$

Clear my choice

Quiz navigation
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Finish attempt ...
Time left **0:54:43**

Question 3
Not yet answered
Marked out of 1.00
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Using the Runge Kutta method, the value of $y(0.1)$ for $y' = x - 2y,\ y(0) = 1$, taking $h = 0.1$, is

Select one:

- a. 0.0825
- b. 0.82
- c. None
- d. 0.803

Clear my choice

Question 4
Not yet answered
Marked out of 1.00
Flag question

Given y_0, y_1, y_2, y_3, Milne's predictor formula to find y_4 for $\frac{dy}{dx} = f(x, y)$, is

Select one:

a.
$$y_4^{(p)} = y_0 + \frac{4h}{3}(2f_1 - f_2 + 2f_3)$$

b.
$$y_4^{(p)} = y_0 + \frac{3h}{2}(2f_1 - f_2 + 2f_3)$$

c. None

d.
$$y_4^{(p)} = y_0 + \frac{h}{3}(f_2 - 2f_3 + f_4)$$

Clear my choice

Question 5
Not yet answered
Marked out of 1.00
Flag question

Given y_0, y_1, y_2, y_3, Milne's corrector formula to find y_4 for $\frac{dy}{dx} = f(x, y)$, is

Select one:

- a. None
- b. $y_4^{(c)} = y_2 + \frac{h}{2}(f_2 + 4f_3 + f_4)$
- c. $y_4^{(c)} = y_2 + \frac{h}{3}(f_2 + 2f_3 + f_4)$
- d. $y_4^{(c)} = y_2 + \frac{h}{3}(f_2 + 4f_3 + f_4)$

Clear my choice

Finish attempt ...