****

**كلية العلوم**

**قسم الفيزياء والفلك**

**College of Sciences**

**Department of**

**Physics and Astronomy**

**Tutorial 5**

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| --- | --- | --- |
|  | **PHYS 400** | **Academic year 1444 H** |
| **Computational Physics** | **Semester 442** |

|  |  |  |
| --- | --- | --- |
| **Student’s Name** |  | **اسم الطالب** |
| **ID number** |  | **الرقم الجامعي** |

Consider the function

1. find the exact analytical form of

1. Fill the table below for using the 3‐points formula

|  |  |
| --- | --- |
| *h* |  |
| 1 |  |
| 0.001 |  |
|  |  |

Compare the values to the exact and conclude

*……………………………………………………………………………………………………………………………………………………………………………………………..*

1. Write a Python programallowing to evaluate and plot both the exact analytical form and the numerical 3 points method of the second derivative of in the interval [0, 2π] using 1000 slices.

*Save the final program and name it: T5*

