****

**كلية العلوم**

**قسم الفيزياء والفلك**

**College of Sciences**

**Department of**

**Physics and Astronomy**

**Tutorial 10**

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

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

**Differential Equations**

Perform the following tasks:

1. Consider the following first order one variable ODE

$$\frac{dx}{dt}+4\sqrt[3]{x}=3cos^{2}(t)$$

Rearrange this equation $\dot{x}=f$*(x, t)*

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1. Write a Python program allowing solving the equation $\dot{x}=f$*(x, t)*  and plotting the solution for *i* in the interval [0, 10] using 1000 slices using the initial values *xi=0* and *ti=0*

*Save the final program and name it T10*

