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DATE: 13.05.2022

SUB CODE: CSA08 Max.Marks:30

SUBJECT NAME: PYTHON PROGRAMMING

**Assignment: I**

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| 1 | **If you are given three sticks, you may or may not be able to arrange them in a triangle. For example, if one of the sticks is 12 inches long and the other two are one inch long, you will not be able to get the short sticks to meet in the middle. For any three lengths, there is a simple test to see if it is possible to form a triangle: If any of the three lengths is greater than the sum of the other two, then you cannot form a triangle. Otherwise, you can. (If the sum of two lengths equals the third, they form what is called a “degenerate” triangle.)**  1. Write a function named is\_triangle that takes three integers as arguments, and that prints either “Yes” or No”, depending on whether you can or cannot form a triangle from sticks with the given lengths.  2. Write a function that prompts the user to input three stick lengths, converts them to integers, and uses is\_triangle to check whether sticks with the given lengths  can form a triangle | K3 | CO2 |
| 2 | **Fermat’s Last Theorem says that there are no positive integers a, b, and c such that an+ bn= cn for any values of n greater than 2.**  1. Write a function named check\_fermat that takes four parameters—a, b, c and n and checks to see if Fermat’s theorem holds. If n is greater than 2 and **an+ bn= cn** the program should print, “Holy smokes, Fermat was wrong!” Otherwise the program should print, “No, that doesn’t work.”  2. Write a function that prompts the user to input values for a, b, c and n, converts them to integers,and uses check\_fermat to check whether they violate Fermat’s theorem. | K3 | CO2 |
| 3 | **Start the Python interpreter and use it as a calculator.**  1. How many seconds are there in 42 minutes 42 seconds?  2. How many miles are there in 10 kilometers? Hint: there are 1.61 kilometers in a mile.  3. If you run a 10 kilometer race in 42 minutes 42 seconds, what is your average pace (time per mile in minutes and seconds)? What is your average speed in miles per hour? | K3 | CO2 |