

Computer Science 1510 Assignment #6

- This assignment requires electronic submission of your source code files. Follow the directions under “Submission Details for All Assignments” on the “Links” tab on the course webpage to submit your assignment.
 - It is not necessary to submit hard (printed) copies of your assignment.
 - Be sure to include sufficient comments in your code, and labels in your output.
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1. Write a C program to evaluate the piecewise function,

$$f(x, y) = \begin{cases} x + y & \text{if } x < 0 \text{ and } y < 0 \\ \sqrt{x} + y & \text{if } x \geq 0 \text{ and } y < 0 \\ x + \sqrt{y} & \text{if } x < 0 \text{ and } y \geq 0 \\ \sqrt{x} + \sqrt{y} & \text{if } x \geq 0 \text{ and } y \geq 0 \end{cases}$$

at a user-specified point (x, y) .

2. The infinite series

$$\sum_{k=0}^{\infty} \frac{1}{k!}$$

converges to the number e . The n th partial sum of such a series is the sum of the first n terms of the series; for example,

$$\frac{1}{0!} + \frac{1}{1!} + \frac{1}{2!} + \frac{1}{3!}$$

is the fourth partial sum. Write a C program to calculate and print the first m partial sums of this series, where the value of m is obtained from the user. Note whether the sums appear to be converging to e .