

Math 229 Quiz 2

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Professor Ilya Kofman

You may use only Julia or `math229.github.io` – no other websites.

NAME: Key

Problem 1.

Define the function $f(x) = \frac{x \sin(2x + 1) + 3 \log(x)}{1 + x^2}$ in Julia.

$$f(x) = (x * \sin(2x+1) + 3 \log(x)) / (1+x^2)$$

Compute the following values. Round answers to 4 decimal places.

$f(2) =$ 0.0323 $f(5) =$ -0.0066

$f(e^2) =$ 0.0986 $f(\pi/2) =$ 0.0095

Problem 2.

The ternary operator is as follows: `predicate ? expression1 : expression2`

For example, function $f(t)$ can be defined in Julia by `f(t) = t <= 10 ? t : 1-t^2`

$$g(x) = \begin{cases} x^3 + 2x^2 - 3 & x < 2 \\ e^{2x+1} \sin x & x \geq 2 \end{cases}$$

Express $g(x)$ in Julia using the ternary operator.

$$g(x) = x < 2 ? x^3 + 2x^2 - 3 : e^{2x+1} * \sin(x)$$

Compute the following values. Round answers to 4 decimal places.

$g(e^2) =$ 6.3623 $g(\pi/2) =$ 5.8106

$g(\sqrt{7}) =$ 256.8997 $g(\sqrt{\pi}) =$ 8.8515