Math 229 Quiz 3a

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

NAME: Solutions

Problem 1.

$$f(x) = \cos^2\left(\frac{4x}{e^{-x} - 3}\right) \qquad g(x) = \frac{\sin^2(7x)}{x^3 + 2x}$$

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

$f(g(0.4)) =$ 0.9412 $\qquad g(f(0.7)) =$ 2.4328

Problem 2.

Write the Julia commands for this function: $h(x) = \begin{cases} -1/x & x < -1 \\ x^2 & -1 \le x \le 1 \\ 1/x & x > 1 \end{cases}$

```
h(x) = x < -1 ? -1/x : x <= 1 ? x^2 : 1/x
```

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

$h(\sqrt{6}) =$ 0.4082 $\qquad h(-\sqrt{6}) =$ 0.4082

Math 229 Quiz 3b

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

NAME: Solutions

Problem 1.

$$f(x) = \cos^2\left(\frac{2x}{e^{-x}+3}\right) \qquad g(x) = \frac{\sin^2(2x)}{x^3 - 3x}$$

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

$f(g(0.4)) =$ 0.9612 $\qquad g(f(0.7)) =$ −0.5089

Problem 2.

Write the Julia commands for this function: $h(x) = \begin{cases} 1/x & x < -1 \\ x^3 & -1 \le x \le 1 \\ 1/x & x > 1 \end{cases}$

```
h(x) = x < -1 ? 1/x : x <= 1 ? x^3 : 1/x
```

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

$h(\sqrt{6}) =$ 0.4082 $\qquad h(-\sqrt{6}) =$ −0.4082