

Math 1A Final Review 1

November 9, 2018

Question 1

Graph $f(x) = \cos(x)$, $g(x) = \ln(x)$, and $h(x) = \arctan(x)$.

Question 2

Expand the following expression and simplify by using properties of logarithms.

$$\ln\left(\frac{x^2y^3}{e^3\sqrt[3]{z}}\right)$$

Question 3

Find the domain of the following function, and the location of all zeros. Also, find f' .

$$f(x) = \frac{3 \ln(x) + 2}{(2 \sin(x) + 1)^2}$$

Question 4

True or false?

- (True/False) The domain of $f(x) = \arcsin(x)$ is $[-\frac{\pi}{2}, \frac{\pi}{2}]$.
- (True/False) $\ln(x + y) = \ln(x)\ln(y)$.
- (True/False) e^{-x} is always positive.
- (True/False) $\ln(x)$ is never negative.
- (True/False) $\ln\left(\frac{x}{y}\right) = \frac{\ln(x)}{\ln(y)}$
- (True/False) $\arctan(\tan(\theta)) = \theta$ for every angle θ .