Math 1A: Discussion 9/7/2018 Solutions

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September 7, 2018

Problem Set 1

Question 1

Evaluate the following expressions.

$$\log_3 27$$

$$\ln\left(\frac{1}{\sqrt{e}}\right)$$

$$\log_4\left(\frac{2}{\sqrt[5]{4}}\right)$$

$$5^{\log_5(3)}$$

Question 2

Remember that we cannot take the logarithm of numbers that are less than or equal to 0. use this fact to find the domain of

$$f(x) = \ln(x^2 - 3x + 2)$$

Problem Set 2

Question 3

A runner's position in meters as a function of seconds in the first five seconds of running can be modeled by the function $f(t) = t^2 + 4t, 0 \leq t \leq 5$. Suppose we want to approximate how fast the runner is moving at $t = 2$ seconds. To do this, we can calculate some average velocities.

- Calculate the runner's average velocity on the interval $[2, 3]$.

- Calculate the runner's average velocity on the interval $[2, 2.5]$. (You can use a calculator).
- Calculate the runner's average velocity on the interval $[2, 2.1]$. (You can use a calculator).
- Using your three previous answers, approximate the runner's instantaneous velocity at $t = 2$.
- Draw a graph of f and interpret your last four answers graphically.

Problem Set 3

No more questions! Have a great weekend!