Introduction to Sage Assignment

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Date	**2017-06-28T19:16:53**
Project	**a8975d68-235e-4f21-8635-2051d699f504**
Location	**01 - Intro to Sage Assignment/Intro to Sage Assignment.sagews**
Original file	**Intro to Sage Assignment.sagews**

Introduction to Sage Assignment

Note 1: Below each question, click on the horizontal gray line. This will create a new input cell. Type your answer directly into this Sage worksheet, and click "Run."

Note 2: If you opened the PDF, please open the .sagews file and put your answers there.

Question 0

Watch the lecture video here.

Did you watch the video? [Type yes or no.]

Question 1

Compute the following in Sage. Make sure you have enough parentheses to get the order of operations right.

Part a

$$\frac{12+5}{4-7}$$

Part b

$$4^{2\times 5-1}-(7+4)$$

Question 2

Find decimal approximations for the following expressions using Sage.

Part a

$$\sqrt{5\sin(3^7)}$$

1

Part b

$$\log_2\left(\arcsin\left(\frac{1}{3}\right)\right)$$

Part c

$$\cos\left(\frac{\pi}{7}\right) - \ln(12)$$

2

Part d

$$\sqrt[8]{1200} + 2 \cdot e^{4/3}$$

Question 3

Consider the functions

$$f(x) = 3x^2 - 5x + 1$$

$$g(t) = \frac{2t - 1}{9t^2 + 4}$$

Part a

Define f and g in Sage. Don't forget you need explicit multiplications, and use plenty of parentheses.

Part b

Calculate $f(8)$

Part c

Calculate $\frac{f(x+h)-f(x)}{h}$

[Hint: don't forget to declare h to be a variable]

Part d

Calculate $g(21)$

Part e

Calculate $g(t-12)$

Notes

- Each lab assignment is worth 5 points.
- The assignment will be graded in class, although you may choose to work on the assignment before class.