Name: _____

Test Prep 1 — Course Intro and 4.9 HW — Math 125

At the end of class hand this in to your TA for credit it is only graded on participation.

Part 1: Getting to Know Your Class (5 minutes)

You will work in groups a bit during quiz sections, so it would be good to meet a few of your classmates now. Please introduce yourself to the group of people around and you. Then write some answers to these questions.

- What is the first name of three classmates near you?
- The name of a high school attended by one of your classmates.
- What is the name of at least one pet belonging to someone sitting near you?

Part 2: Homework Practice (15 minutes)

Instructions

1. Attempt on your own for a few minutes, then compare your work with students around you.
2. When you think your answer is correct, let your TA know and they will come check it and mark on the page that they looked at it. Keep everything in exact form.

Directly from homework

$$\text{Find } f. \qquad f''(x) = 4e^x - 9\sin(x), \quad f(0) = 3, \quad f\left(\frac{\pi}{2}\right) = 0$$

Part 3: Review and More HW (rest of class)

Board Bonus: If you feel confident in your derivatives or trig values, let your TA know and you can pick one problem below and write one of the answers on the board. If you do, hand your TA this paper so they can mark a +1 board bonus for the day.

A. Derivative Practice Find the derivatives of each of the following

1. $y = 5x + \dfrac{7}{2x} + 6\sqrt{x} + 4\ln(x+1)$

2. $y = \cos\left(4x + e^{(5x^3)}\right)$

3. $y = x^2 \cdot \arctan(\sqrt{x})$

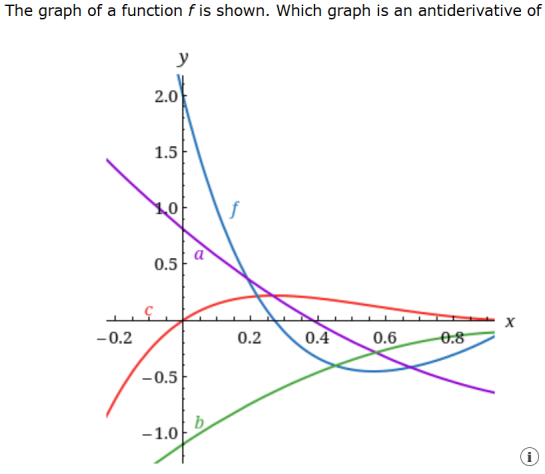
B. Trig Facts (no calculator; use exact values; think unit circle)

$\sin\left(\dfrac{\pi}{4}\right) =$ _____ $\tan\left(\dfrac{2\pi}{3}\right) =$ _____ $\sec\left(\dfrac{\pi}{6}\right) =$ _____ $\sin^{-1}\left(\dfrac{1}{2}\right) =$ _____

C. Try these other 4.9 HW questions on a separate sheet of paper

1. Calc 1 Graph Fact Question

The graph of a function f is shown. Which graph is an antiderivative of f?



2. Bullet Train Acceleration Question.

A particular bullet train accelerates and decelerates at the rate of 10 ft/s^2. Its maximum cruising speed is 105 mi/h.

(a) What is the maximum distance (in mi) the train can travel if it accelerates from rest until it reaches its cruising speed and then runs at that speed for 20 minutes?

(Hint: The numbers come out nicer in feet and seconds, so convert everything to that, then convert at the end to get the desired answer.)