Math 48A, Lesson 1 Quiz: Test Your Memory

In this class, we will focus on our energy on learning to describe different classes of functions known as elementary functions. The foundations you set in this class will support you for the rest of your career in mathematics. Consider the following 8 functions:

A. $f\left(x\right) = 3+2^{x}$ B. $f\left(x\right)= 2x^{5}-4$

C. $f\left(x\right) = 2∙\left|1-2x\right|-4$ D. $f\left(x\right) = \frac{8}{ x^{2}-4 }$

E. $f\left(x\right)= 2+log\_{10}(x-1)$ F. $f\left(x\right) = 3 + \sqrt[ 2]{x-1}$

G. $f\left(x\right) = 3x-2 $ H. $f\left(x\right)= x^{2}+6x+9$

Using the work you did on your Lesson 1 Handout, figure out the names for each of the functions listed above in options A - H. Next to each choice, justify your answer. We’ll solve the first problem together as a team.

1. Linear function
2. Quadratic function

(Hint: in Spanish, the word Cuadro means square)

1. Absolute value function
2. Rational function

 (aka reciprocal function)

1. Power function
2. Root function
3. Exponential function
4. Logarithmic function

System-navigation skill:

Recognize and remind yourself frequently that grades on in-class timed exams do NOT measure learning.

In-class timed exams do not measure learning. They measure your ability to recall facts, manage your anxiety, and use test-taking strategies. They also measure your ability to solve problems under time pressure.

Let me share some stories to explain a little more. I (Jeff) have earned many A grades on in-class time exams while knowing very little about the actual content. In fact, the learning I did to earn those grades was shallow. I can remember at least one exam where I got a 93/100 and understood almost nothing about the material.

The same reality exists for F grades. I (Jeff) have gotten an F on an exam for a class where I learned very deeply. I didn’t finish the exam because I wrote a lot about a single problem and forgot about the rest of the test.

Let’s spin this out a little more using a thought experiment. I (Jeff) have a BS, MA, and PhD in mathematics. I studied math at university for 9 years and have taught Math at Foothill College for 8 years. I’ve written two textbooks and published multiple academic mathematical articles. And yet, I could take almost any exam in any math class at Foothill College and get an F (a 0%). I simply could turn it in without writing a single word. Does that mean that I am bad at math? Or, perhaps I might turn in an exam with all the wrong answers on purpose. Does that mean I don’t know what I’m doing?

Remember, if you do poorly on a test, tell yourself: I am intelligent, I am smart, I am hella good at math. Then use effective help-seeking practices and learning techniques to improve your performance on future exams. We’ll explore more about such practices throughout our work together.

Most math teachers are content experts (math nerds). Very few of the math teachers that I have had spent dedicated time studying how learning works. Our college education system is designed in such a way that your math professors can get jobs without understanding much about the science of learning nor about how to develop effective teaching practices to inspire significant learning that achieve equitable outcomes. That is a policy problem. One cruel feature of that set of policies is that the burden is placed on your shoulders. In this class, our team is going to share that burden.

System-navigation skill:

When you make mistakes on an in-class timed exam, complete your exam correction process as soon as you can. Then, make an appointment in office hours to talk with your teacher about your corrections and get guidance on the next steps.

Any time you make a mistake on a math test, that is an indication of your intelligence and hard work. The more mistakes you make, the better you become. The fact that our system punishes you for those mistakes is stupid, anti-productive, harmful and unjust. Don’t fall into that trap. We’ll talk more about how to do exam corrections in the future.