

Problem Set 0
(Sample)

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Question 1

- (a) I grew up in Atlanta, GA, but I currently live in Baltimore, MD.
- (b) I was a professor at the United States Naval Academy and looking for a change. The opportunity came up at GW, and it was a great way to expand professionally and also stay in the DMV. So far it's been great!
- (c) I didn't take CS in highschool, officially, but my father is a software developer. He exposed me to computer science and programming at an early age, probably around 9 or 10 years old. I also totally went to (multiple) programming camps and summer programs.
- (d) I have taken a discrete math course before ... ;-)
- (e) The reason $e^{\pi i} + 1 = 0$ is so amazing is because it combines two big irrational constants, π and e , as well as the imaginary number i , with the two numbers needed for all counting, 0 and 1. There is also addition (implying subtraction), multiplication (implying division), and exponentiation (implying logarithms). There is also a notion of equality, a test, implying some sense of logic and reasoning. It can be re-written as $e^{\pi i} = -1$, so you have a notion of negative numbers ...it goes on. From this one equation, you can derive a lot of mathematics.

Question 2

- (a) 4
- (b) 5
- (c) 5
- (d) I'd probably ask my colleagues — they're pretty great.

Question 3

Ok. So my 2nd grade math teacher is introducing the notion of primes. My parents both have advanced degrees in math and have given me some independent learning on the topic. When my teacher said that 1 is prime because it can only be divided cleanly by 1 and itself, 1, I got very upset. I insisted that 1 is not prime—it's not! The definition of primes are for numbers greater than 2, ut this is something that can be debated, to an extent. Anyway, I let my opinion be known. This did not go over well, and I was sent to the principal's office. My parents were called. It was a whole thing and is still a story told in my family.