

Midterm review time!

Brian studying while Stewie enjoys college

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Hi everyone, this is Brian Griffin from Family Guy struggling to understand my physics class. I just wish I was in Corey's class so I could learn all of this awesome calculus that I'm trying to apply. In any event, I managed to sneak into his office to see what things Corey thought was important for your upcoming midterm. Corey told me that all of Section 2.1 will be covered, but only part of Section 1.4, in addition to everything else that the quiz covered. Good luck!

1. Section 1.4: Continuity, one-sided limits, and the intermediate value theorem. Corey will be covering this material on Tuesday in class, in addition to heading off into Section 2.2 (believe it or not, this is excellent review for the midterm Thursday!) In any event, for this exam, Corey would expect you to know what makes a function continuous, but will not expect you to know anything about "one sided limits" (those are the ones that have a little + or - in the superscript of c : $\lim_{x \rightarrow c^\pm} f(x)$).
2. Section 2.1: The derivative and tangent line problem. You should be able to compute the derivative of any of the basic examples Corey showed you in class, in addition to being able to complete any of the homework problems. You should know how to find the equation of a tangent line as well. More specifically, I can see Corey giving you a function and a point on the graph, and he'd ask "Please find the equation of the

tangent line of the function $f(x)$ at the point $(x, f(x))$. See homework problems 25-32 of this section and 53-56 of the next section (2.2). The next is that differentiability implies continuity. In particular, a more accurate description of what Corey seems to want you to know is to be able to identify where a function could fail to be differentiable. Remember, he could ask those kinds of problems about continuity and limits on graphs. Just remember that anywhere a graph has a sharp point or a vertical tangent line is where it's not differentiable (these aren't the only features that would designate a failure to be differentiable, but just the most likely ones you'd see). It seems like that would be a good final exam question, but that doesn't mean that for this quiz one could be ignorant of these issues. Knowing that a function isn't always differentiable everywhere is an important basic fact.

3. General studying tips. I think it's a pretty good idea to actually study for this test. Moreover, use your quiz as a study guide. A good idea would be to maybe find questions just like the quiz, write them down on a sheet of paper and practice the test environment by clearing your desk of everything except a pencil and calculator, and time yourself. It's a scary thought, but that's exactly what the test will be like. Then, you can gauge how well prepared you are by how comfortable that experience is. Another great study tactic is to simply give yourself TONS of homework questions, and ensure that you understand every concept related to them. The exam will be a lot like the quiz in structure, and will only test over a little more content—of course, there are questions that there was no time to ask on the quiz that were fair game then, and are fair game now. Of course, Corey's office hours are a great place to ask questions as well. Good luck, and ROCK ON!!!!!!