

Math 211 Awesome midterm review sheet

Richard Nixon's head

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Hello fellow citizens! This is Richard Nixon's head from Futurama here to tell you just a little more about what will be on the midterm. Good luck, I'm not a crook! And, ROCK ON!

1. Section 2.2: Basic differentiation rules and rates of change. It is in this section that our lives become easier. Here is where we learn lots of great rules that tell us how to take derivatives of common functions: polynomials, and the sin and cos function, mainly. I would know how to use these rules (especially the power rule) correctly. Remember, in class Corey showed you all some really common mistakes. For example, people often mistake the power rule and try to use it too often and forget their task is easier: $\frac{d}{dx}\pi^2 \neq 2\pi$, it's 0 (because π is a constant, right?). Please, for Corey's sake, try not to make these common errors—see the classnotes for more information regarding these. See the homework for good practice and see the class notes for a good explanation of these rules. There are also some functions which Corey notes are possible to differentiate with these rules, even though it doesn't always seem like it. For instance, consider number 24, 29, 43, or 44 on page 115. Once a small bit of algebra is done, one can see that you *can* use the basic rules we learned in this section to differentiate these sorts of functions. Finding the equation of the tangent line to a given function at a certain point (despite being introduced in the last section) will also

be a good tool to know. Also, it's in this section that we discussed the relationship between position, velocity and acceleration (the derivative of the prior is equal to the next). It is these relationships that allow us to predict physical phenomena, and study other applications.

2. Other information. The exam will look a lot like the quiz in many ways. It will be the same format, and cover the same material. In addition, it will also cover Section 2.2. You will also be given the entire class period to take the exam. The exam will be roughly the size of 2 or 3 quizzes, and I don't plan that it will take the entire period to take, but rather, I plan it to take you about 60 minutes. I'm giving you the whole period because I want you to have it and do well! So study hard, practice those homework questions, and be sure to ask for any help if you need it.

ROCK ON!