Exam 2 covers sections 2.7, 2.8, 2.9, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7

1. Chapter 2 Review, p. 177: T/F Quiz 17-18, Exercises 37, 39, 41ab, 47ab, 49


3. Your exam will contain FOUR Calculus Skills No Partial Credit problems (Skills questions). One each from 3.1, 3.2, 3.4 and 3.5.

4. There MAY BE up to 5 True-False Questions on your exam coming from the end-of-chapter reviews. I may change the wording on the questions and thereby also change them from True to False or vice versa - so be sure to read these carefully on your exam.

5. For 2.7, 2.8, 2.9: You WILL be asked a question that states "Use the limit definition to find the derivative of the function." To receive full credit you must write out the steps for determining the derivative using limits. This includes simplifying the limit expression and eliminating h from the denominator. See Chapter 2 End of Chapter Review problems 41ab and 47ab.

6. For derivative rules in 3.1, 3.2, 3.4 & 3.5: You should be able to apply the derivative rules to find the derivative when you are given either a table of values, graphical information, or simply generic functions (like f(x) without f being defined). See Chapter 2 End of Chapter Review problem 49, Section 2.9 problem 37, Chapter 3 End of Chapter Review problems 67-74 & 77-79, Section 3.2 problems 31 - 38, Section 3.5 problems 53 - 57.

7. For derivative rules in 3.1, 3.2, 3.4, & 3.5: You should be comfortable with taking derivatives of functions using these rules. You will have to take a minimum of FOUR derivatives (the Skills questions!). There may also be questions on the Partial Credit portion of the exam which simply ask you to find derivatives of functions. See Chapter 3 End of Chapter Review problems 1, 3, 5, 7, 9, 11, 13, 15, 17, 21, 25, 35, 37 & Skills Questions at http://calculus.math.rpi.edu

8. For derivative applications: You should expect to see AT LEAST ONE of the following application questions.

(a) Find an equation of the tangent line to the curve at the given point. See Chapter 3 End of Chapter Review problems 55 - 57 & 59

(b) Find the points on the curve where the tangent is horizontal. See Section 3.1 problems 45, 46, Section 3.4 problems 29, 30.

(c) Be comfortable find rates of change from Chapter 3.3 when asked for velocity (problems 1 - 10), linear density (problem 17) or current (problem 19).

(d) Use implicit differentiation to find \( \frac{dy}{dx} \).

(e) Find higher order derivatives (2nd or 3rd) and possibly evaluate them.. See end of Chapter 3 End of Chapter Review problems 49, 50.
Directions found on the front cover of your text
Use of books, notes or calculators is NOT permitted.

Please show all your work! Answers without appropriate supporting work may not receive full credit.

Clearly indicate your answers to each problem by underlining them or placing a box around your answers!

Trigonometric functions at the values $0, \frac{k\pi}{6}, \frac{k\pi}{4}, \frac{k\pi}{3}, \frac{k\pi}{2},$ and $k\pi$, where $k$ is any integer positive or negative, must be evaluated!

Calculus Skills Questions, T/F and Multiple Choice Questions are graded with NO PARTIAL CREDIT. For Calculus Skills questions only answers placed in the box provided will be graded.

1. T/F answers Chapter 2: F, T