MATH 122B & 125 FINAL EXAM INFORMATION – FALL 2017

PROCEDURES

- The final exam is on **Tuesday, December 12 from 1:00 – 3:00 pm**. Do not be late. You will not be given additional time if you arrive after 1:00 pm. We recommend arriving 15 minutes early.
- If you use DRC testing accommodations, arrive 15 minutes early to the DRC testing office.
- The final exam is NOT given in your usual classroom. You will find the room assignments at http://math.arizona.edu/academics/courses/finals when they are updated (scroll down the page to find your course). You will not be allowed to take the final in a room other than the one assigned to your section.
- You will not be allowed to leave the exam room until 2:00 pm.
- Because multiple sections are assigned to a room, students in each section need to sit together. Additional directions, such as sitting every other seat, will be given at the exam site.
- All cell phones and electronic devices (including iPods, laptops, and language translators) that transmit or receive a wireless signal must be turned off and put away during the exam. Vibrate or silence modes are not allowed.
- Bring your graphing calculator. Models that can perform symbolic calculations are NOT allowed on the final exam. These include the TI-89,TI NSpire CAS, HP 50g, and Casio Classpad 330. Using one of these models during the exam is considered a violation of the UA Code of Academic Integrity.
- Students are not allowed to share calculators during the exam. Calculator covers must be removed and put away.
- Bring a picture ID.

ABOUT THE FINAL EXAM AND GRADING

- The final exam study guide and an additional practice sheet are posted under the Common Exam Information section at http://math.arizona.edu/~calc/m122b.html and http://math.arizona.edu/~calc/m125.html.
- Although the questions in the guide are not samples of actual exam questions, they provide an excellent review of the topics that are covered on the exam. Problems at the end of each chapter in the Review Exercises can also provide review.
- No formula sheets or notes of any kind are allowed. You are not allowed to use your own paper. If you need additional space for a solution, you must use paper provided by the proctors.
- Many questions have a "show all your work" format. To receive credit, your final answer must clearly follow from your work even if your answer is correct.
- Some questions have a multiple-choice, fill-in-the-blank, or matching format. These formats are reserved for questions/answers that would normally receive no partial credit.
- Using built-in features on your calculator does not satisfy the "show all your work" format. (For example – finding the location of a local maximum of a function.)
- Deductions will be made for incorrect or missing mathematical notation in problems where work must be shown.

- Graders are not expected to interpret the intention of your work or to choose from multiple solutions on your paper. If you provide two different solutions without clearly indicating which solution you want graded, it is very likely that neither solution will be graded.
- The wording and notation used in the questions are consistent to what is found in the text, in WebAssign, and the final exam study guide.
- Units must be included in all answers for questions involving units, even if no instructions are given to do so.
- Questions may incorporate information across several chapters. (For example – given a function, you could be asked to find the slope of a tangent line and the area under the curve.)

EXACT ANSWERS AND ESTIMATES

- Unless specifically asked to estimate, your final answers should be given in exact simplified form. For example - if your answer is $\cos(\pi/4)$, your final answer must be $\sqrt{2}/2$ or $1/\sqrt{2}$.
- You should not use approximation techniques unless specifically told to do so. For example - do not use the numerical integration feature on your calculator if the Fundamental Theorem can be used to evaluate a definite integral. Sometimes the word "exact" is added to the question for extra emphasis to remind you that you should not be making an approximation.
- When only an estimate is possible you must clearly show how you obtained your estimate and the values you used to obtain your estimate in order to receive credit for a correct answer.
- You should also be able to determine if your estimate is larger or smaller than the true answer, when possible.

FUNCTIONS AND EQUATIONS

- Functions can be given in any form (tables, graphs, equations, words).
- Any function type can appear: polynomial, rational, exponential, logarithmic, trigonometric (all six), and inverse trigonometric ($\arcsin x$, $\arctan x$). Hyperbolic functions will not be used.
- Absolute value, piecewise defined, and implicitly defined functions will also appear.
- Equations and functions can include parameters.

YOU NEED TO KNOW……

- the exact simplified trigonometric values of the special angles.
- the geometry formulas: area of a circle, rectangle, and triangle; circumference of a circle, perimeter of a rectangle; volume of a rectangular box, cylinder, cone, and sphere; surface area of a rectangular box and the lateral surface area of a cylinder.
- Pythagorean Theorem and the triangle definitions of the trigonometric functions.
- the relationship between position, velocity, and acceleration.
- the proper procedure for performing the First and Second Derivative tests.
- the derivative rules, including the general inverse.
- the antiderivative rules, including the method of substitution in section 7.1.
- the formula for the average value of a function over an interval.

- the mathematical definitions of $f'(a)$, $f'(x)$, and $\int_a^b f(x)dx$.
- proper notation for derivatives, integrals, and limits.
- terminology such as difference quotient, average rate of change, rate of change, differentiable, smooth, tangent line, local linearization, critical point, local extrema, global extrema, inflection point, family of functions, parameter, local linearization, L'Hopital's Rule, dominance, Riemann sum, left hand sum, right hand sum, First and Second Fundamental Theorem of Calculus, initial value problem, underestimate and overestimate, method of substitution.
- how to make practical interpretations and graphical interpretations.
- how to use graphs to interpret information about functions, first derivatives, and second derivatives.
- There will be no questions that require the specific use of a calculator program such as LR Sums or Allsums, but you need to know how to find the left hand sum and right hand sum for small *n* given a table of values or a graph of a function.