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/m143.sp06/handouts143/t3\_143\_420/REVIEW/review\_suggestions\_3.tex

- 1 This list is not in final form. Like, stuff may yet be added to it.
- 2 Test #3 is
  - Thursday  
4/20/06.
- 3 The test will cover the material of Assignments #1 – #38, with emphasis on #30 – #38.
- 4 Be sure you know:
  - (a) How to compute difference quotients
  - (b) The page-164 graph-equation pairs. Remember we have added
    - (i)  $y = \sqrt{4 - x^2}$
    - (ii)  $y = e^x$
    - (iii)  $y = \ln(x)$ , where  $\ln = \log_e$
  - (c) The section-2.5 moves.
  - (d) How to pronounce “Euler,” and a decimal approximation to Euler’s number  $e$ .
  - (e) How to graph rational functions:
    - (i) quotients of degree-one polynomials
    - (ii) quotients of degree-two polynomials
  - (f) How to write an exponential expression logarithmically.
  - (g) How to write an logarithmic expression exponentially.
  - (h) The **Three Laws of Logs**
    - (i) Graph of functions involving logarithms and exponentials.
    - (j) Solving exponential equations.
    - (k) Compound Interest.
    - (l) Solving logarithmic equations.
- 5 In the end-of chapter tests:

- (A) For Chapter 3 (page 328): *all* the problems except 8(c), 8(d), and 9(e). Problem 9(d) is a no-calculator problem.
- (B) For Chapter 4 (page 393)
- Problems 1-5, with your calculator locked up in the trunk someplace.
  - Problems 6 and 8 done completely from an algebraic point of view (using laws of logs and algebra). And simplified. Such problems are likely to appear on the no-calculator portion of the exam. Bring the calculator into play only to get a decimal approximation of your simplified algebraic answer.

**6** In the old-tests collection:

- (A) Test-#3 (11/18/05) fair-game parts:
- Problem 1 (note that this is on the with-calculator part of test #3).
  - Problem 3: for part (b) you can use long division to rewrite the formula for  $f$  as

$$f(x) = 5 + \frac{10}{x - 3},$$

and then you can see that the graph will be related to the graph of  $y = \frac{1}{x}$  with a right-3 shift, a vertical stretch, and then a vertical up-5 shift.

- Problem 4: last fall, many students missed points on this problem by omitting to write down the *factorization* after they had chased down all the zeros. Problem 8: you should be able to locate (c), (d), and (h) among the graphs. When we get to section 4.1, you should be able to match up all the equations and graphs.
- Problem 5
- Problem 6
- Problem 7
  - sign chart
  - intercepts
  - vertical asymptotes
  - long division
  - end behavior
  - horizontal asymptote
  - slant asymptote
  - asymptote intercepts

Note that problem 7 is on the no-calculator part of the exam.

(g) Problem 8 (matching)

(B) Final-Exam (12/12/05) fair-game parts:

(a) Problems 1, 2, 3 (on the with-calculator part)

(b) Problem 4

(c) Problem 5 (a difference quotient)

(d) Problem 6

(e) Problem 7

(f) Problem 8

(g) Problem 10

(h) Problem 11

(i) Problem 12

(j) Problem 15

(k) Problem 17

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