

Last update: Wed Jun 29 14:57:16 MDT 2005 [/m170.su04/handouts170/t2\\_170\\_630/review\\_suggestions\\_2.tex](/m170.su04/handouts170/t2_170_630/review_suggestions_2.tex)

1 This list is now in final form.

2 Test #2 is

Thursday  
6/30/05.

The test will cover the material of Assignments #12 – #18 roughly.

3 There will be no with-calculator part of this exam.

4 Stuff to be able to do:

(a) We still need to be mindful of the **limit definition of the derivative of a function**.

(b) Be able to factor derivatives in support of computing a sign chart leading to Stickman.

(c) Be able to compute derivatives via the chapter-three rules. [Click here for an answer sheet for the above “rules” drill.](#)

(d) Be able to compute a tangent-line equation. A non-wavy tangent line.

(e) Implicit differentiation.

(f) The derivative of an inverse function via implicit differentiation.

(g) Write down the derivatives of

(i) **sin**

(viii) **arcsin**

(ii) **cos**

(ix) **exp**

(iii) **tan**

(x) **ln**

(iv) **sec**

(xi) Polynomials

(v) **csc**

(xii) Radicals

(vi) **cot**

(vii) **arctan**

(xiii)  $f(x) = \sqrt[n]{x^m}$

quickly and accurately.

**5** Stuff to know:

- (a) How the signs of  $f'$  and  $f''$  affect the shape of the graph of  $f$ .
- (b) How the product rule arises from the basic limit definition of the derivative.
- (c) The limit definitions of  $\sin'(x)$  and  $\cos'(x)$ , and how they relate to  $\cos'(0)$  and  $\sin'(0)$ .
- (d) How to get at  $\sin'(0)$  via unit-circle properties.
- (e) How to find the derivative of an inverse function via implicit differentiation.
- (f) How to find the derivative of  $\arctan(x)$  via implicit differentiation.

**6** I was asked to go through the page 270++ problems to indicate some exam-review possibilities.

The page-270-271 TRUE-FALSE QUIZ is all fair game.

On page 271 we have EXERCISES:

- (a) The odds 1 - 49 are OK for us – lots of Chain-Rule problems.
- (b) 15 is implicit differentiation
- (c) 43, 45, 47 involve hyperbolic functions (not on the test) and chain rule (*on* the test).
- (d) 55, 57, 59 for non-wavy tangent lines: when you're done, look at your answer. Ask yourself whether your final product is the equation of a straight line.
- (e) 63 is good
- (f) For 68,  $C'(2) = 6$ .
- (g) 69-81 odds are good.