

Last update: Fri Nov 17 05:36:28 MST 2006 /m147.fa06/handouts147/t4\_147\_B17/review\_suggestions\_4.tex

1 This list is now in final form.

2 Test #4 is

Friday  
11/17/06.

We've agreed to start the test at 0715, a whole 25 minutes early.

3 The test will cover the material of Assignments #36 – #51 and —, roughly. As you can see, this is another test on trigonometry mostly. Test #4 overlaps Test #3 quite a lot.

Be sure you are with it about:

- (a) All the Test #3 chestnuts: [click here](#). Especially problems on which the Test-#3 class average was lowest.
- (b) Multiple angles backwards and forwards:
  - (i)  $\cos(2\theta) =$  has three right-hand sides
  - (ii)  $\sin(\theta) \cos(\theta) =$
- (c) Finding  $\sin$ ,  $\cos$ , or  $\tan$  of  $\theta/2$
- (d) Inverse-trigonometric functions
  - (i) Domains and ranges, especially ranges
  - (ii) Check also problems 7, 8, and 9 on the 8/3/01 old test.
  - (iii) The MATH-175 tree of things like  $\cos(\arctan(2x/3))$
  - (iv) Story-problem aspects.
- (e) Trigonometric forms of complex numbers pushed a bit further:  $n^{\text{th}}$  roots of complex numbers. See, for example, problems 3 and 4 on the 8/3/01 old test.
- (f) Two-by-two determinants: areas and Cramer's rule.
- (g) Sum-to-product and product-to-sum rewrites enabled by your backwards-and-forwards heppness  $\sin(\alpha + \beta)$ - and  $\cos(\alpha + \beta)$ -wise
- (h) Given the value of one of the six trig functions for  $\theta$ , along with some location info for  $\theta$ , find the exact value of  $\sin(2\theta)$ ,  $\sin(\theta/2)$ ,  $\cos(2\theta)$ , and  $\cos(\theta/2)$ .
- (i) Ungraph a cycle.

**4** End-of-chapter purple-page tests:

- (a) Chapter 7 (page 574): 1-11
- (b) Chapter 8 (page 627): 3, 4, 5
- (c) Chapter 6 (page 520): 1-17
- (d) Chapter 5 (page 458): 1-10 (especially 10)

**Old-test questions cited in the Test-#3 runup are still worthy objects of veneration. Here we add some more to the list.**

**5** Comments on problems in the MATH-147 Test #1 for 6/22/01 (in the Old-Test collection).

- (a) Problem 2 – you need to help your calculator!

**6** Comments on problems in the no-calculator MATH-147 Test #3 for 7/20/01 (in the Old-Test collection).

- (a) Problem 3 – polar form of a complex number – really just another clock problem.

**7** Comments on problems in the MATH-147 Test #4 for 8/3/01 (in the Old-Test collection).

- (a) Problem 3 – Clock Plus 8.3
- (b) Problem 4 – Clock Plus 8.3
- (c) Problem 7 & 8 – Pythagorean identities and the *range* of **arccos**
- (d) Problem 9 – Inverse-trig-function graphs