

## Math 108 Final Study Guide

Things you should know

Everything on Study Guide 1 and 2 as well as

1. The definition of a periodic function
2. The right triangle definition of sine, cosine and tangent
3. What the standard form for an angle is
4. What a co-terminal angle is
5. The definition of radian measure
6. How to find the length of an arc of a circle given the angle that intercepts it
7. How to find the area of a sector of a circle given the central angle and radius
8. How to convert between degrees and radians
9. The unit circle definition of sine, cosine and tangent
10. How to use a scientific calculator to get values for the trig functions, and to always check your mode degrees/radians first!
11. The ratios of the sides for 30/60/90 degree triangles as well as 45/45/90 triangles
12. The signs (+,-) of the trig functions in each quadrant
13. What a reference angle is. How to find the reference angle of an angle for any angle
14. How to find the exact value of a trig functions for any angle whose reference angle is 0,30,45, 60 or 90 degrees.
15. The 3 reciprocal trig functions, co-tangent, secant and co-secant.
16. How to graph a trig function. Know what  $A$ ,  $B$ ,  $C$ , and  $D$  do to the graph of a trig function of the form  $A \sin(B(x - C)) + D$
17. The domains and ranges of the six trig functions
18. How to use the inverse trig functions
19. The vertical and horizontal line tests and what they are used for
20. The domain and ranges of the six inverse trig functions
21. How to calculate an angle using inverse trig functions on a calculator, including co-tangent, secant and co-secant.
22. How to solve right triangles
23. The law of sines
24. The law of cosines
25. How to use the law of sines and the law of cosines to solve triangles
26. How to verify a trigonometric identity
27. The Odd/Even, co-function, addition, subtraction, double angle, half angle, product to sum, sum to product identities and how to use them
28. How to solve a simple equation involving trig functions
29. If we cover these in class Euler's and DeMoivre's formulas
30. Anything else we cover the last two weeks of class