

Exam 1 Study Guide

This is only a summary of what you need to know. Be sure to study all homework problems.

Unit Circle:

- Be able to fill in all angles and coordinates of points on the unit circle
- Be able to use the unit circle to evaluate all six trig functions at a given angle

Triangles:

- Be able to evaluate the six trig functions of an angle in a given triangle
- Know the Pythagorean identity, especially know how to find the side of a triangle which is not the hypotenuse
- Be able to solve a triangle such as 1.3 #71

Memorize and be able to use the following formulas:

- Pythagorean identities:

- Reciprocal identities:

- Quotient Identities:

- The definition of a radian:
- Arc length (remember that θ MUST be in RADIANS!):
- Area of a sector (remember that θ MUST be in RADIANS!):
- Angular and Linear speed (remember that θ MUST be in RADIANS!):

Angles:

- Be able to find complementary and supplementary angles
- Be able to find coterminal angles, one positive and one negative
- Be able to convert between radians and degrees

Trig functions:

- Need to know which trig functions are even/odd and what that means.
- Be able to solve for two values of θ such as 1.4 #91-96
- Determine the value of other trig functions given constraints such as 1.4 #23-32
- Determine the value of trig functions given a point on terminal side of angle like 1.4 13-18
- Be able to find the cofunction value of a complementary angle such as 1.3 #41-46
- Be able to evaluate the trig functions at negative angles and angles greater than 2π

Graphs:

- Need to be able to draw graph of $y = \sin \theta$ and $y = \cos \theta$
- Be able to identify the amplitude, period, phase shift, and range given an equation
- Be able to graph transformed function such as 1.5 #31-60

Other:

- Be able to label all four quadrants I, II, III, or IV
- Be able to complete the trig value table
- Be able to find angular and linear speed
- Be able to specify units for all word problems

Be sure to practice homework problems and quiz problems.