Math Analysis: Semester 1 Final Study Guide

Chapter 4 Trig functions page 247 – 338

- (S 4.1) Write angle in standard position
- (S 4.1) Co-terminal
- (S 4.1) Complement and supplement
- (S 4.1) Convert radians ←→ degrees
- (S 4.1) Radian and degree mode on calculator
- (S 4.1) Degrees, minutes, second ←→ decimal
- (S 4.2) Find trig ratios of an angle (exact and calculator approximation)
- (S 4.2) Find trig ratios using period
- (S 4.2, 4.7) Find inverse trig given a ratio
- (S 4.3,5.1) Reciprocal, Quotient & Pythagorean Identities
- (S 4.3) Find trig ratios using triangles– Pythagorean theorem and SOH-CAH-TOA (identities)
- (S 4.3, 4.8) Trig Word problems – triangles – angle of elevation – angle of depression
- (S 4.4) Reference angle
- (S 4.4) Find quadrant
- (S 4.4, 5.1) Find trig ratios using identities
- (S 4.5) Graph sine and cosine
- (S 4.5) Find amplitude and period
- (S 4.7) Find inverse trig exact values
- (S 4.7) Find inverse trig composites
- (S 4.3, 4.8) Trig Word problems – triangles - Navigation with ships & planes, angle of elevation, etc.

Chapter 5 Analytic Trig page 339 – 390

- (S5.1-5.2) trig identities–factor–simplify using identities
- (S5.3) Solve trig equations (collect like terms, factor, square root, quadratic type, etc.)
- (S5.4) Sum and difference formulas
- (S5.5) Double angle formulas and Half angle formulas

Chapter 6 –Additional topics in trig – page 391 – 450

- (S6.1) Law of Sine - Solve triangles –ASA, AAS, SSA (ambiguous case)
- (S6.1) word problems – using Law of Sine
- (S6.1) Area problems – using sine formulas
- (S6.2) Law of Cosine – Solve triangles - SSS, SAS
- (S6.2) word problems – using Law of Cosine
- (S6.2) Area problems using Heron's formula
- (S6.3) Vectors – graph, find magnitude, direction, component form, linear combination, initial / terminal points, addition & scalar multiplication properties
- (S6.4) Vectors and dot products
- (S6.5) Complex # - trig and standard form, graph, absolute value
- (S6.5) Product, quotient of complex # in trig form, DeMoivre's Theorem

Chapter 9.6 – 9.7 Polar

- (S9.6) Graph polar points
- (S9.6) Convert polar ←→ rectangular
- (S9.6) Find additional representations of polar points
- (S9.7) Graphs of polar equations