

Math 143  
Exam 3 Review Sheet

**Section 7.1** Trigonometric Identities

- Memorize Key Identities (Pythagorean, Fundamental, Negative, and Reciprocal identities)
- Be able to verify that a given identity holds using algebra and other known identities
- Be able to use counterexamples to show that a given trig equation is not an identity

**Section 7.2** Trigonometric Equations

- Be able to solve elementary trig equations ( $\sin \theta = a$ ,  $\cos \theta = a$ ,  $\tan \theta = a$ ).
- Be able to solve equations involving shifts and multiples of angles.
- Be able to use factoring to solve trigonometric equations
- Be able to find all possible solutions to a trig equation, or solutions on a given interval.
- Be able to solve application problems involving a trig equation.

**Section 7.3** Addition and Subtraction Formulas

- Memorize key formulas (addition and subtraction formulas for sin and cos)
- Use these formulas to compute exact values of sin and cos
- Use these formulas to find the quadrant of a sum or difference of two angles using information about the sin and cos of the original angles
- Use these formulas to solve equations and verify identities.

**Section 7.4** Multiple Angle Formulas

- Memorize key formulas (double and half-angle formulas and the half angle identities for sin and cos)
- Use these formulas to compute exact values of sin and cos
- Use these formulas to solve equations and verify identities.
- Use these formulas to reduce a trig expression for a multiple of an angle to one involving only a single angle.

**Section 5.1** Inverse Functions

- Know the definition of a one to one function
- Know the definition of the inverse of a one to one function
- Be able to determine whether or not a given function is one to one
- Be able to find the equation for the inverse of a given function
- Understand the relationship between an inverse function and its graph

**Practice Problems:**

**Chapter 5 Review p. 392 # 1, 2, 3, 5**

**Chapter 7 Review pp. 565-568 # 2, 5, 7, 8, 12, 17, 18, 23, 25, 30, 34, 41, 44, 46, 49, 51, 57, 58**