PreCalculus Name: Period: Date:

2/26

Lesson 7-2b: Trigonometric Addition and Subtraction Formulas II

Objectives
Students will…
- Be able to use addition and subtraction formulas to evaluate trig functions and to prove or verify identities.

Addition and Subtraction Formulas
Formulas for Sine:

Formulas for Cosine:

Formulas for Tangent:

Guidelines for Proving Identities
Furthermore, we have some guidelines/tips for proving identities.
1. **Focus on the fractions**: More often than not, identity proofs are more easily done when you work with the side that involves a fraction.
2. **Pick the more "complicated" side**: It's easier to modify the sides that has less sines or cosines. Generally, rewriting everything as sine or cosine can help you when you are "stuck."
3. **Use the Known Identities!**: Use algebra and the identities are already known to you. Look to combine multiple fractions into one with a common denominator.

Using Addition and Subtraction Formulas
Prove the following identity: $\cos\left(\frac{\pi}{2} - u\right) = \sin u$

Example
Verify the following identity: $\frac{1+\tan x}{1-\tan x} = \tan\left(\frac{\pi}{4} + x\right)$

Homework 2/28
TB pg. 539-540 #19, 21, 27, 31, 32, 33, 34, 35, 37