Math 4 Honors Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lesson 4-4: *Sum & Difference Formulas for Sine & Tangent* Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Learning Goal:

* *I can, without a calculator, use trigonometric identities such as angle addition/subtraction and double angle formulas, to express values of trigonometric functions in terms of rational numbers and radicals.*



**Recall:**

**But wait, there’s more…. The cosine sum formulas can be used to derive ones for sine.**



**And the sine and cosine sum formulas can be used to derive ones for tangent.**



Verify this identity. *Work only on the left side.*



What do you think is the formula for

OVER 🡪

Page 2

**Examples:**

**Find the exact values for the following.**

**1.** ** 2. **

**3. 4. **



**5. Given:**



** Find: , ,**

**What quadrant is (*α−β*) in? How do you know?**

Math 4 Honors Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Homework: Sum & Difference Formulas for Sine & Tangent Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Simplify. *Exact values only.***



1. 2. 

3.  4. tan(195°)

5. sin(105°) 6. 

7. sin (α + β) – sin (α – β) =

8. sin (α + β) sin (α – β) =

*Write in terms of sine only.*

9. Rewrite sin 13*x* cos 2*x* – cos 13*x* sin 2*x* as an equivalent expression involving only the sine function.

OVER 🡪

10. Given:



Find the following:



d. What quadrant is  in?

**Verify the following identities.**

11. 

12. 