Quiz 10

Due: 12 November 2024

Answer the questions in the spaces provided. Show all of your work and circle the answer you would like to have graded for each question.

Name:				
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1. Find the exact value of $cos(105^{\circ})$ by hand.

2. Find all solutions to the equation $\sin(2x)\cos(5x) + \sin(5x)\cos(2x) = 0$.

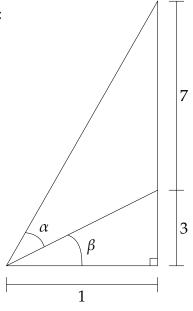
3. Find the exact value of the product $\cos\left(\frac{11\pi}{12}\right) \cdot \cos\left(\frac{\pi}{12}\right)$ by hand.

4. Verify the identity

$$\frac{\sin(4x) + \sin(2x)}{\cos(2x) - \cos(4x)} = \cot(x).$$

Hint: Use sum-to-product formulas.

5. Consult the picture and solve for the exact value of α : <u>Hint</u>: Observe that $\tan(\alpha + \beta) = 10$.



(Not drawn to scale.)