Name: _____ Date: 3/30/26

Session 12

1. Find $\sin(\theta - \phi)$, given $\sin\theta = 4/5$ in QII and $\tan\phi = 1/3$ in QIII

2. Prove the following expression

$$\frac{\sin x + \sin y}{\cos x + \cos y} = \tan\left(\frac{x+y}{2}\right)$$

3. Write the products as a sum

$\sin 5x \cos 4x$

4. Write the sum as a product

$\sin 7x + \sin 5x$

5. prove the following identity

$$\frac{\cos(2x)-1}{\sin(2x)} = -\tan x$$

Lowering powers

ie. Lower the powers and rewrite the expression in terms of the first power of cosine

$\sin^4 x$

Solving basic trigonometric equations

7. List solutions from $[0, 2\pi]$

a) $\cos\theta = -\sqrt{3}/2$

b) $\sin\theta = 1/2$

Solve and find all possible solutions

8. $2\sin^2\theta - \sin\theta - 1 = 0$