Complete as many of the following problems as you can with your table. You do not have to go in order. If **your entire group** finishes early, and your answers have been checked, you may leave early.

1. Prove $\tan(\theta)\sin(\theta) = \sec(\theta) - \cos(\theta)$

2. Prove $\dfrac{\cos(\theta)}{1+\sin(\theta)} + \dfrac{1+\sin(\theta)}{\cos(\theta)} = 2\sec(\theta)$

3. Prove $\sin(A) + \cos(A) = \dfrac{\sin(A)}{1-\cot(A)} - \dfrac{\cos(A)}{\tan(A)-1}$

4. Prove $(1 - \sin(\theta))(\sec(\theta) + \tan(\theta)) = \cos(\theta)$

5. Factor $\csc^2 \theta + 3 \csc \theta + 2$

6. Factor $\sin^2 B - \cos^2 B$

7. Distribute and simplify $(\cos \theta + \cot \theta)(\tan \theta + \sec \theta)$

Key:

5. $(\csc \theta + 1)(\csc \theta + 2)$ 6. $(\sin B - \cos B)(\sin B + \cos B)$ 7. $\sin \theta + 2 + \csc \theta$