

Whiteboard Race- work together or take turns solving questions

#1-6. Using the sum & difference identities, condense each of the following and express as a trig function of a single angle.

1. $\sin 97^\circ \cos 43^\circ + \cos 97^\circ \sin 43^\circ$

2. $\cos 72^\circ \cos 130^\circ + \sin 72^\circ \sin 130^\circ$

3. $\frac{\tan 140^\circ - \tan 60^\circ}{1 + \tan 140^\circ \tan 60^\circ}$

5. $\cos \frac{\pi}{6} \cos \frac{\pi}{7} - \sin \frac{\pi}{6} \sin \frac{\pi}{7}$

6. $\frac{\tan \frac{\pi}{3} + \tan \frac{\pi}{4}}{1 - \tan \frac{\pi}{3} \tan \frac{\pi}{4}}$

#7-8. Use the sum & difference identities with unit circle values to find exact answers for the following:

7. $\tan(-105^\circ)$

8. $\sin 345^\circ$

#9-11. Given: $\csc \alpha = \frac{13}{5}$, $\frac{\pi}{2} \leq \alpha \leq \pi$, and $\tan \beta = -\frac{3}{4}$, $\frac{3\pi}{2} \leq \beta \leq 2\pi$, find the following:

9. $\sin(\alpha - \beta)$

10. $\cos(\beta + \alpha)$

11. $\tan(\alpha - \beta)$