

9-4 Measure of 2 Angles

Name _____

“Sum and Difference” identities

$$\cos(\alpha \pm \beta) = \cos \alpha \cos \beta \mp \sin \alpha \sin \beta$$

$$\sin(\alpha \pm \beta) = \sin \alpha \cos \beta \pm \cos \alpha \sin \beta$$

$$\tan(\alpha \pm \beta) = \frac{\tan \alpha \pm \tan \beta}{1 \mp \tan \alpha \tan \beta}$$

If α and β are the measures of two first quadrant angles, find the exact value of each function.

_____ 1. If $\sin \alpha = \frac{8}{17}$ and $\tan \beta = \frac{24}{7}$, find $\cos(\alpha + \beta)$

_____ 2. If $\sin \alpha = \frac{12}{13}$ and $\sin \beta = \frac{40}{41}$, find $\cos(\alpha - \beta)$

_____ 3. If $\tan \alpha = \frac{12}{35}$ and $\cos \beta = \frac{3}{5}$, find $\sin(\alpha + \beta)$

_____ 4. If $\sin \alpha = \frac{7}{25}$ and $\sin \beta = \frac{12}{13}$, find $\cos(\alpha - \beta)$

_____ 5. If $\csc \alpha = \frac{13}{5}$ and $\tan \beta = \frac{35}{12}$, find $\sin(\alpha + \beta)$

_____ 6. If $\cos \alpha = \frac{28}{53}$ and $\sin \beta = \frac{9}{41}$, find $\cos(\alpha - \beta)$

_____ 7. If $\tan \alpha = \frac{24}{7}$ and $\sin \beta = \frac{12}{37}$, find $\tan(\alpha + \beta)$