

Sum and Difference Formulas

1. Find the exact value of each expression
(Similar to p.227 #11-22)

$$\sin \frac{11\pi}{12}$$

2. Find the exact value of each expression
(Similar to p.227 #11-22)

$$\tan \frac{17\pi}{12}$$

3. Find the exact value of each expression
(Similar to p.227 #11-22)

$$\sec 75^\circ$$

4. Find the exact value of each expression
(Similar to p.227 #23-32)

$$\cos 85^\circ \cos 25^\circ + \sin 85^\circ \sin 25^\circ$$

5. Find the exact value of each expression
(Similar to p.227 #23-32)

$$\sin \frac{7\pi}{15} \cos \frac{\pi}{5} + \cos \frac{7\pi}{15} \sin \frac{\pi}{5}$$

6. Find the exact value of each of the following under the given conditions:

(a) $\sin(\alpha + \beta)$ (b) $\cos(\alpha + \beta)$

(c) $\sin(\alpha - \beta)$ (d) $\tan(\alpha - \beta)$

(Similar to p.227 #33-38)

$$\cos \alpha = \frac{\sqrt{7}}{9}, \quad 0 < \alpha < \frac{\pi}{2};$$

$$\sin \beta = \frac{-2}{3}, \quad \frac{-\pi}{2} < \beta < 0$$

7. Establish each identity
(Similar to p.228 #47-72)

$$\cos\left(\frac{\pi}{2} + x\right) = -\sin x$$

8. Establish each identity
(Similar to p.228 #47-72)

$$\frac{\csc \alpha \csc \beta}{\cot \beta + \cot \alpha} = \csc(\alpha + \beta)$$

9. Find the exact value of each expression
(Similar to p.228 #73-84) NEXT TIME

$$\sin\left[\sin^{-1} \frac{8}{17} - \tan^{-1} \frac{15}{8}\right]$$

10. Find the exact value of each expression
(Similar to p.228 #73-84)

$$\tan\left[\sin^{-1} \frac{1}{3} + \frac{\pi}{3}\right]$$

11. Write each trigonometric expression as an algebraic expression containing u and v
(Similar to p.229 #85-90)

$$\sec(\sin^{-1}(u-3) + \tan^{-1}(u-5))$$

12. Solve each equation on the interval

$$0 \leq \theta < 2\pi$$

(Similar to p.229 #91-96)

$$\tan x - \sqrt{2} \sec x = -1$$