

9.8**Practice WS**

In Exercises 1–4, find the exact value of the expression.

1. $\tan 105^\circ$

2. $\sin \frac{\pi}{12}$

3. $\sin 255^\circ$

4. $\cos \frac{7\pi}{12}$

In Exercises 5–7, evaluate the expression given that $\sin a = \frac{3}{5}$ with $0 < a < \frac{\pi}{2}$ and

$$\cos b = -\frac{5}{13} \text{ with } \pi < b < \frac{3\pi}{2}.$$

5. $\sin(a + b)$

6. $\sin(a - b)$

7. $\cos(a - b)$

In Exercise 8 simplify the expression.

8. $\sin\left(x + \frac{\pi}{2}\right)$

9. Describe and correct the error in simplifying the expression.

$$\begin{aligned} \times \quad \cos\left(x + \frac{3\pi}{2}\right) &= \cos x \cos \frac{3\pi}{2} + \sin x \sin \frac{3\pi}{2} \\ &= (0) \cos x + (-1) \sin x \\ &= -\sin x \end{aligned}$$