Name_____ Date_____

9.2 Practice B

In Exercises 1–6, find the exact value of the expression.

1. $\tan 165°$

2. $\sin \dfrac{13\pi}{12}$

3. $\sin(-105°)$

4. $\cos 75°$

5. $\cos\left(-\dfrac{5\pi}{12}\right)$

6. $\tan \dfrac{25\pi}{12}$

In Exercises 7–12, evaluate the expression given that $\sin a = \dfrac{12}{13}$ **with** $0 < a < \dfrac{\pi}{2}$

and $\cos b = -\dfrac{8}{17}$ **with** $\pi < b < \dfrac{3\pi}{2}$.

7. $\sin(a + b)$

8. $\sin(a - b)$

9. $\cos(a - b)$

10. $\cos(a + b)$

11. $\tan(a + b)$

12. $\tan(a - b)$

In Exercises 13–15, simplify the expression.

13. $\tan(x + 3\pi)$

14. $\cos\left(x + \dfrac{3\pi}{2}\right)$

15. $\sin(x - \pi)$

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

$$\times \quad \sin\left(x + \frac{\pi}{2}\right) = \sin x \sin \frac{\pi}{2} + \cos x \cos \frac{\pi}{2}$$
$$= (1) \sin x + (0) \cos x$$
$$= \sin x$$

In Exercises 17–20, solve the equation for $0 \le x < 2\pi$.

17. $\cos\left(x - \dfrac{3\pi}{2}\right) = \dfrac{1}{2}$

18. $\cos\left(x + \dfrac{\pi}{3}\right) + \cos\left(x - \dfrac{\pi}{3}\right) = 0$

19. $\tan\left(x + \dfrac{\pi}{4}\right) - \tan\left(\dfrac{\pi}{4} - x\right) = 0$

20. $\sin(x - \pi) - \cos(x + \pi) = 0$

21. Verify the identity $\tan(a + b) = \dfrac{\sin(a + b)}{\cos(a + b)}$ by using the angle sum formula

for tangent.