5-1 Trigonometric Identities

Find the value of each expression using the given information.

17. If csc $\theta = -1.24$, find $\sec\left(\theta - \frac{\pi}{2}\right)$.

ANSWER:
–1.24

18. If cos $x = 0.61$, find $\sin\left(x - \frac{\pi}{2}\right)$.

ANSWER:
–0.61

19. If tan $\theta = -1.52$, find $\cot\left(\theta - \frac{\pi}{2}\right)$.

ANSWER:
1.52

20. If sin $\theta = 0.18$, find $\cos\left(\theta - \frac{\pi}{2}\right)$.

ANSWER:
0.18

21. If cot $x = 1.35$, find $\tan\left(x - \frac{\pi}{2}\right)$.

ANSWER:
–1.35

Simplify each expression.

27. $\frac{\csc x \cos x + \cot x}{\sec x \cot x}$

ANSWER:
2 cos x

31. $\cot x - \cos^3 x \csc x$

ANSWER:
sin x cos x

5-1 Trigonometric Identities

Simplify each expression.

32. $\frac{\cos x}{\sec x + 1} + \frac{\cos x}{\sec x 1}$

ANSWER:

$2 \cot^2 x$

34. $\frac{1}{\sec x + 1} + \frac{1}{\sec x 1}$

ANSWER:

$2 \cot x \csc x$

Rewrite as an expression that does not involve a fraction.

38. $\frac{\sin x}{\csc x \cot x}$

ANSWER:

$1 + \cos x$

45. $\frac{\cot 2x \cos x}{\csc x 1}$

ANSWER:

$\cos x (\csc x + 1)$