10.3 Extra Practice

In Exercises 1–4, evaluate the six trigonometric functions of θ .



In Exercises 5–7, use the unit circle to evaluate the six trigonometric functions of θ .

5. 5π **6.** -720° **7.** $-\frac{5\pi}{2}$

In Exercises 8–13, sketch the angle. Then find its reference angle.

 8. -250° 9. 110° 10. -310°

 11. $\frac{13\pi}{4}$ 12. $\frac{11\pi}{6}$ 13. $-\frac{13\pi}{3}$

In Exercises 14–16, evaluate the function without using technology.

14. cot 240° **15.** sin 315° **16.** sec $\left(-\frac{5\pi}{6}\right)$

17. The horizontal distance d (in feet) traveled by a projectile launched at an angle θ and with an initial speed v (in feet per second) is given by $d = \frac{v^2}{32} \sin 2\theta$. To win a shot-put competition, your last throw must travel a horizontal distance of at least 15 feet. You release the shot put at a 45° angle with an initial speed of 22 feet per second. Do you win the competition? Justify your answer.