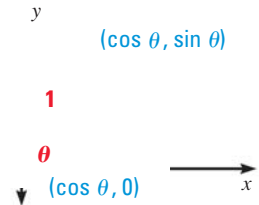


55. **TAKS REASONING** At a basketball game, a person has a chance to win 1 million dollars by making a half court shot. The distance from half court to the point below the 10-foot-high basketball rim is 41.75 feet.
- Write an equation that models the path of the basketball if the person releases the ball 6 feet high with an initial speed of 40 feet per second.
 - Simplify the equation. Use a calculator to find the angles at which the person can make the half court shot.
 - Assume the person releases the ball at one of the angles found in part (b). What other assumption(s) must you make to say that the shot is made?
56. **CHALLENGE** A rectangle is inscribed in a semicircle with radius 1, as shown. What value of θ creates the rectangle with the largest area?



TAKS PRACTICE at classzone.com

MIXED REVIEW FOR TAKS

REVIEW

Skills Review
Handbook p. 994;
TAKS Workbook

57. **TAKS PRACTICE** $\angle MNO$ and $\angle PQR$ are supplementary angles. Which of the following statements is true? **TAKS Obj. 10**

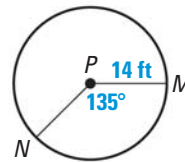
- (A) $\angle MNO = \angle PQR$ (B) $\angle MNO \perp \angle PQR$
(C) $m\angle MNO + m\angle PQR = 90^\circ$ (D) $m\angle MNO + m\angle PQR = 180^\circ$

REVIEW

Lesson 13.2;
TAKS Workbook

58. **TAKS PRACTICE** What is the approximate length of arc MN ? **TAKS Obj. 8**

- (F) 30.5 ft (G) 33.0 ft
(H) 39.6 ft (J) 55.0 ft



QUIZ for Lessons 14.6–14.7

Find the exact value of the expression. (pp. 949, 955)

1. $\sin \frac{\pi}{12}$ 2. $\sin (-22.5^\circ)$ 3. $\tan (-345^\circ)$ 4. $\cos \frac{\pi}{8}$

Solve the equation for $0 \leq x < 2\pi$.

5. $\sin \left(x + \frac{\pi}{2}\right) - \sin \left(x - \frac{\pi}{2}\right) = 0$ (p. 949) 6. $\cos 2x = 3 \sin x + 2$ (p. 955)

Find the exact values of $\sin \frac{a}{2}$, $\cos \frac{a}{2}$, and $\tan 2a$. (p. 955)

7. $\tan a = \frac{3}{5}$, $0 < a < \frac{\pi}{2}$ 8. $\cos a = -\frac{4}{7}$, $\pi < a < \frac{3\pi}{2}$

9. **FOOTBALL** Use the formula $x = \frac{1}{32}v^2 \sin 2\theta$ to find the horizontal distance x (in feet) that a football travels if it is kicked from ground level with an initial speed of 25 feet per second at an angle of 30° . (p. 955)