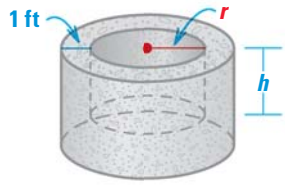
36. CHALLENGE You need to build a cylindrical water tank using 100 cubic feet of concrete. The sides and the base of the tank must be 1 foot thick.



a. Write an equation that gives the tank's inner height h in terms of its inner radius r.

b. Write an equation that gives the volume V of water that the tank can hold as a function of r.

c. Graph the equation from part (b). What values of r and h maximize the tank's capacity?

MIXED REVIEW FOR TAKS

TAKS PRACTICE at classzone.com

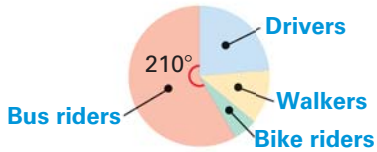
REVIEW
Lesson 4.7; TAKS Workbook

37. TAKS PRACTICE Doris plants a 75 square foot rectangular garden. She uses 36 feet of fencing to enclose the garden. What are the approximate dimensions of the garden? *TAKS Obj. 5*

Ⓐ 5.6 ft by 13.4 ft Ⓑ 5.7 ft by 12.3 ft Ⓒ 6.0 ft by 12.0 ft Ⓓ 6.6 ft by 11.4 ft

REVIEW
Skills Review Handbook p. 1006; TAKS Workbook

38. TAKS PRACTICE The circle graph represents 840 students. The red section of the circle graph represents the number of students who ride a bus to school everyday. How many students ride a bus to school everyday? *TAKS Obj. 8*



Ⓕ 176 Ⓖ 350

Ⓗ 490 Ⓙ 513

QUIZ *for Lessons 8.1–8.3*

The variables x and y vary inversely. Use the given values to write an equation relating x and y. Then find y when $x = -4$. *(p. 551)*

1. $x = 8, y = 3$ **2.** $x = 2, y = -9$ **3.** $x = -5, y = \frac{8}{3}$ **4.** $x = -\frac{1}{4}, y = -32$

Graph the function.

5. $y = \frac{3}{2x}$ *(p. 558)* **6.** $y = \frac{4}{x - 2} + 1$ *(p. 558)* **7.** $f(x) = \frac{-2x}{3x - 6}$ *(p. 558)*

8. $y = \frac{-8}{x^2 - 1}$ *(p. 565)* **9.** $y = \frac{x^2 - 6}{x^2 + 2}$ *(p. 565)* **10.** $g(x) = \frac{x^3 - 8}{2x^2}$ *(p. 565)*

11. SOFTBALL A pitcher throws 16 strikes in her first 38 pitches. The table shows how the pitcher's strike percentage changes if she throws x consecutive strikes after the first 38 pitches. Write a rational function for the strike percentage in terms of x. Graph the function. How many consecutive strikes must the pitcher throw to reach a strike percentage of 0.60? *(p. 558)*

x	Total strikes	Total pitches	Strike percentage
0	16	38	0.42
5	21	43	0.49
10	26	48	0.54
x	$x + 16$	$x + 38$	?