

43. **WOMEN'S BASKETBALL** From 1985 to 2003, the total attendance  $A$  (in thousands) at NCAA women's basketball games and the number  $T$  of NCAA women's basketball teams can be modeled by

$$A = -1.95x^3 + 70.1x^2 - 188x + 2150 \quad \text{and} \quad T = 14.8x + 725$$

where  $x$  is the number of years since 1985. Write a function for the average attendance per team from 1985 to 2003.

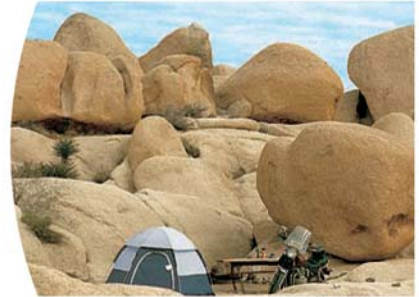
44. **TAKS REASONING** The price  $p$  (in dollars) that a radio manufacturer is able to charge for a radio is given by  $p = 40 - 4x^2$  where  $x$  is the number (in millions) of radios produced. It costs the company \$15 to make a radio.
- Write an expression for the company's total revenue in terms of  $x$ .
  - Write a function for the company's profit  $P$  by subtracting the total cost to make  $x$  radios from the expression in part (a).
  - Currently, the company produces 1.5 million radios and makes a profit of \$24,000,000. Write and solve an equation to find a lesser number of radios that the company could produce and still make the same profit.
  - Do all the solutions in part (c) make sense in this situation? *Explain*.

45. **TAKS REASONING** Since 1990, overnight stays  $S$  and total visits  $V$  (both in millions) to national parks can be modeled by

$$S = -0.00722x^4 + 0.176x^3 - 1.40x^2 + 3.39x + 17.6$$

$$V = 3.10x + 256$$

where  $x$  is the number of years since 1990. Write a function for the percent of visits to national parks that were overnight stays. *Explain* how you constructed your function.



Joshua Tree National Park, California

46. **CHALLENGE** The profit  $P$  (in millions of dollars) for a DVD manufacturer can be modeled by  $P = -6x^3 + 72x$  where  $x$  is the number of DVDs produced (in millions). Show that 2 million DVDs is the only production level for the company that yields a profit of \$96,000,000.

## MIXED REVIEW FOR TAKS

**TAKS PRACTICE** at classzone.com

### REVIEW

TAKS Preparation  
p. 66;  
TAKS Workbook

47. **TAKS PRACTICE** James leaves his home to walk to school. Four minutes later, his friend leaves her home to ride her bike to school. James averages 3 miles per hour and his friend averages 10 miles per hour. James and his friend travel a combined total of 8 miles and arrive at school at the same time. How long did it take James to walk to school? **TAKS Obj. 10**

- (A) 34 min                      (B) 38 min  
(C) 40 min                      (D) 44 min

### REVIEW

Lesson 2.3;  
TAKS Workbook

48. **TAKS PRACTICE** What are the coordinates of the  $x$ -intercept of the graph of  $2x + 3y = 15$ ? **TAKS Obj. 3**

- (F)  $(-\frac{15}{2}, 0)$                       (G)  $(\frac{15}{2}, 0)$   
(H) (0, 5)                          (J) (13, 0)