

Chapter One
Section Four

Graphics Calculators:

- Purposes:
1. A graphics calculator is a tool to *help* us does work.
 2. A graphics calculator makes the learning *efficiently*.

- Notes:
1. We first learn the basic steps (keystrokes), then we should practice the procedure.
 2. Some topics will require using simple "*paper and pencil*" to gain a full understanding.

Keystrokes for TI 83:

1. *ENTER* key: Nothing happens until you press [ENTER].

Examples: a. $2 * 5 + 3$
b. $2 * 3^2 + 4$

2. *2nd* key: The blue operations to the left above a key.

Examples: a. OFF
b. QUIT
c. ANS
d. ENTRY

3. *ALPHA* key: The gray character to the right above the key.

Examples: All letters (Memory's rooms)

4. *Negation (-)* and *Subtraction -*

5. *Exponents:*
- a. x^2 key. (Square root)
 - b. x^3 on MATH key. (Cube root)
 - c. Using ^ in general.
 - d. EE key: $(19/2) E^{-2} = .095$

6. *Implicit multiplication:* $2(3+4)$ or $5\cos 0$

7. *Order of operations:* Same as Mathematics.

Examples: $5^2 + 3$
 $2 * 3 + 1$

8. *ANS* key: This calculator stores the answer to the last computation in an Answer register, which is accessed by the [ANS] key. This result is then available at any time during the next computation.

9. Roots:
- a. $\sqrt{(81)} = \sqrt{81} = 9$
 - b. $4 * \sqrt{(16)} = \sqrt[4]{16} = 2$

10. *ENTRY* key: To recall to screen the last command you executed.

Estimation:

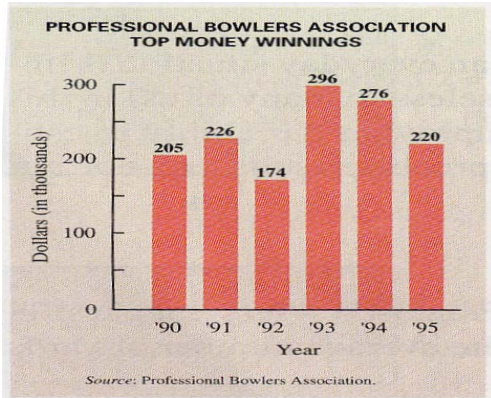
Example 1: A birdhouse for swallows can accommodate up to 8 nests. How many birdhouses would be necessary to accommodate 58 nests?

Example 2: In 1996 Jerry Rice of the San Francisco 49ers caught 108 passes for a total of 1254 yards. What was his approximate average number of yards per catch?

Example 3: In a recent year there were approximately 127,000 males in the 25-29 year age bracket working on farms. This represented part of the total of 238,000 farm workers in that age bracket. Of the 3331,000 farm workers in the 40-44 year age bracket, 160,000 were males. Without using a calculator, determine which age bracket had a larger proportion of males.

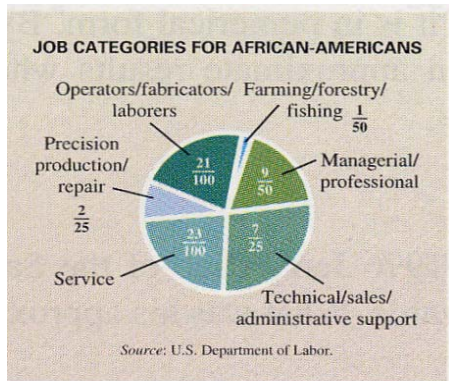
Example 4: Suppose your bill in a restaurant amounts to \$84.20. How much money should you leave for a tip of 15%?

Reading Graphs:



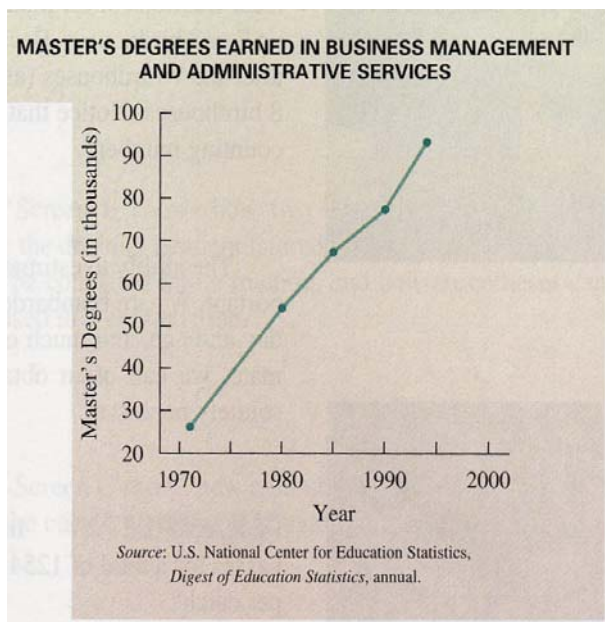
Bar Graph:

Find the top money winners on the professional bowlers tour. How much were the winnings in 1994?



Pie Chart:

Estimate the number of service employees in a typical group of 5000.



Line Graph:

Find the number of master's degrees earned in business management and administrative services in 1990.

Exercise: (page 39)

Solutions

Pages to Store Trading Cards A plastic page designed to hold trading cards will hold up to 9 cards. How many pages will be needed to store 431 cards?

48 pages

Containers for African Violets A gardener wants to fertilize 400 African violets. Each container of fertilizer will supply up to 30 plants. How many containers will she need to do the job?

14 containers

Price per Acre of Land In order to build a “millennium clock” on Mount Washington in Nevada that would tick once each year, chime once each century, and last at least 10,000 years, the nonprofit Long Now Foundation purchased 80 acres of land for \$140,000. Which one of the following is the closest estimate to the price per acre?

- A. \$1000 B. \$2000
C. \$4000 D. \$11,200

B

People per Square Mile Hale County in Texas has a population of 34,671 and covers 1005 square miles. About how many people per square mile live in Hale County?

- A. 35 B. 350 C. 3500 D. 35,000

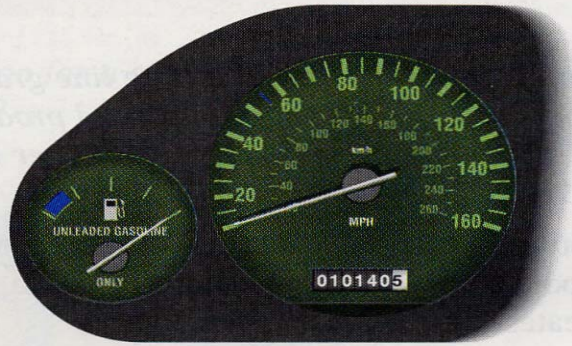
A

Football Carries In 1989, Blaise Bryant, a running back for the Iowa State football team, carried the ball 299 times and scored 19 touchdowns. This means that he scored a touchdown about once in every _____ times he carried the ball.

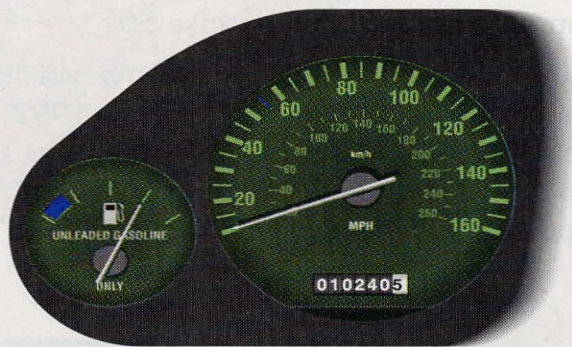
- A. 25 B. 20 C. 15 D. 10

C

Visiting Relatives When the LeBeau family left Mandeville to visit their relatives in Ventress, their automobile's instrument panel looked like this.



When they arrived in Ventress, it looked like this.



What is the round-trip distance between Mandeville and Ventress?

200 miles

If the car's tank holds 20 gallons of gasoline, how much is left?

15 gallons

How many miles per gallon did the car get?

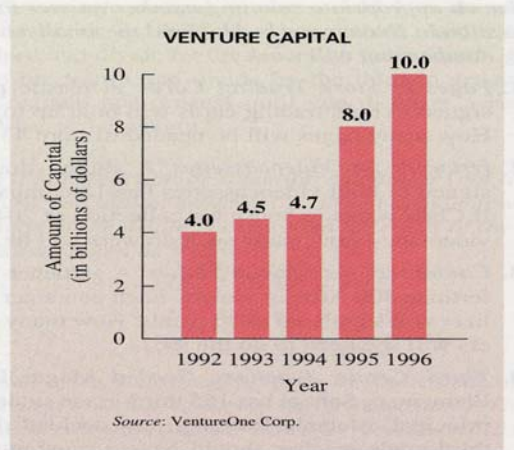
20 miles / gallon

How many gallons of gas will the car have left after the return trip?

10 gallons

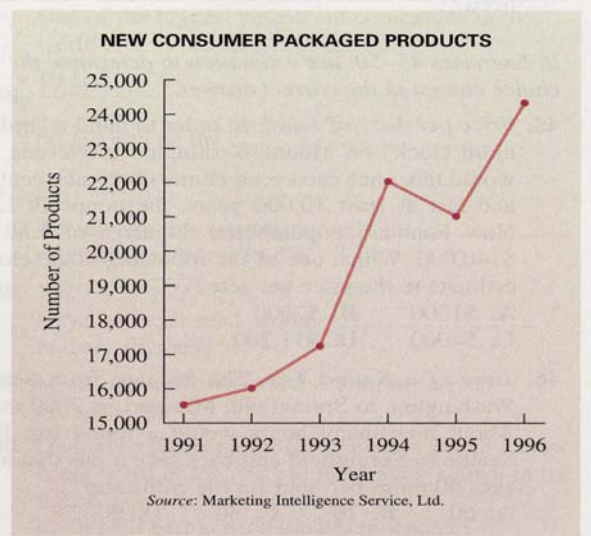
Venture Capital Venture capital is money invested in new, often speculative, business enterprises. The amount of venture capital invested in companies rose during the 1990s, as shown in the bar graph here. Use the graph to answer the questions in Exercises 55–58.

55. How much was invested in 1992?
56. Which year showed the greatest increase from the previous year?
57. How much more was invested in 1996 than in 1993?
58. Was there any year that showed a decrease from the previous year?



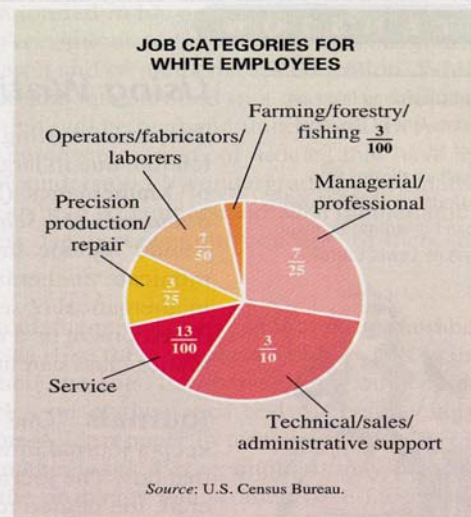
Consumer-Packaged Products The line graph shows the number of new consumer-packaged products for the years 1991–1996. Use the graph to answer Exercises 59–62.

59. Between which two years did the number of new products decrease? Between which two years did the greatest increase occur?
60. Estimate the number of new products in 1993, 1994, 1995, and 1996.
61. Estimate the increase in new products from 1993 to 1994 and from 1995 to 1996. Does your answer confirm your answer to Exercise 59?
62. Explain in your own words how you can tell from this graph that the increase from 1992 to 1993 was greater than the increase from 1991 to 1992. In your explanation, do not use figures; instead, focus on the appearance of the graph.



Employees in the Workforce The pie chart gives fractional job categories for white employees in the workforce in 1993 (ages 16 and older). Use the chart to answer Exercises 63–66.

63. Which category represents the largest group of employees? The smallest group?
64. In a random sample of 5000 such employees, about how many would we expect to be employed in service occupations?
65. In a random sample of 7500 such employees, about how many would we expect to be employed in farming/forestry/fishing occupations?
66. In a random sample of 10,000 such employees, about how many more would we expect to be employed in managerial/professional than precision production/repair?



55. 4.0 billion dollars 56. 1995
 57. 5.5 billion dollars 58. no 59. 1994–1995; 1993–1994 60. 1993: 17,200; 1994: 22,000; 1995: 21,000; 1996: 24,300 61. 4800; 3300; yes 63. largest: technical/sales/administrative support; smallest: farming/forestry/fishing 64. 650 65. 225 66. 1600