6.4 Exercises

Find the part using the multiplication shortcut. See Example 2.

1. 35% of 120 test tubes

2. 20% of 1800 rentals

3. 45% of 4080 military personnel

4. 12% of 3650 Web sites

5. 4% of 120 ft

6. 9% of $150

7. 150% of 210 files

8. 130% of 60 trees

9. 52.5% of 1560 trucks

10. 38.2% of 4250 loads

11. 2% of $164

12. 6% of $434

13. 225% of 680 tables

14. 135% of 800 commuters

15. 17.5% of 1040 homes

16. 46.1% of 843 kilograms

17. 0.9% of $2400

18. 0.3% of $1400

Find the whole using the percent proportion. See Example 4.

19. 80 e-mails is 25% of what number of e-mails?

20. 32 medical exams is 5% of what number of medical exams?

21. 30% of what number of hay bales is 48 hay bales?

22. 55% of what number of experiments is 209 experiments?

23. 495 successful students is 90% of what number of students?

24. 84 letters is 28% of what number of letters?

25. 462 mountain bikes is 140% of what number of mountain bikes?

26. 1496 graduates is 110% of what number of graduates?

27. $12\frac{1}{2}$% of what number is 350?

$\left(\textit{Hint: Write } 12\frac{1}{2}\text{% as 12.5%.}\right)$

28. $5\frac{1}{2}$% of what number is 176?

$\left(\textit{Hint: Write } 5\frac{1}{2}\text{% as 5.5%.}\right)$

Find the percent using the percent proportion. Round your answers to the nearest tenth if necessary. See Example 6.

29. 18 bean burritos is what percent of 36 bean burritos?

30. 62 hospital rooms is what percent of 248 hospital rooms?

31. 390 SUVs is what percent of 750 SUVs?

32. 650 liters is what percent of 1000 liters?

33. 32 patients is what percent of 400 patients?

34. 7 bridges is what percent of 350 bridges?

35. 54 CDs is what percent of 3600 CDs?

36. 60 cartons is what percent of 2400 cartons?

37. What percent of $344 is $64?

38. What percent of $398 is $14?

39. What percent of 250 tires is 23 tires?

40. What percent of 105 employees is 54 employees?

41. A student turned in the following answers on a test. You can tell that two of the answers are incorrect without even working the problems. Find the incorrect answers and explain how you identified them (without actually solving the problems).

50% of $84 is $42 .

150% of $30 is $20 .

25% of $16 is $32 .

100% of $217 is $217 .

42. Write a percent problem on any topic you choose. Be sure to include only two of the three components so that you can solve for the third component. Identify each component of the problem and then solve it.

Solve each application problem. Round percent answers to the nearest tenth if necessary. See Examples 3, 5, 7, and 8.

43. Aimee Toit, who works part-time, earns $240 per week and has 22% of this amount withheld for taxes, Social Security, and Medicare. Find the amount withheld.

44. Kirsten Speed needs 124 credits to graduate. If she has already completed 75% of the necessary credits, find the number of credits completed.

45. The guided-missile destroyer USS *Sullivans* has a 335-person crew, of which 13% are female. Find the number of female crew members. Round to the nearest whole number. (*Source:* U.S. Navy.)

46. In a survey on where to hold their weddings, 45% of 480 adults preferred a nonreligious site. How many adults said they would prefer a religious site? (*Source:* National Family Opinion Research.)
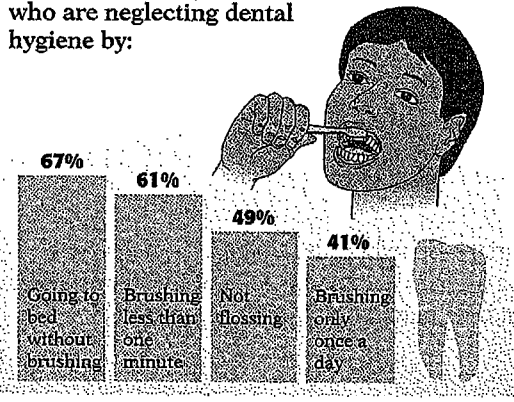
47. This year, there are 550 scholarship applicants. If 40% of the applicants will receive a scholarship, find the number of students who will receive a scholarship.

48. A U.S. Food and Drug Administration (FDA) biologist found that canned tuna is "relatively clean." Extraneous matter was found in 5% of the 1600 cans of tuna tested. How many cans of tuna contained extraneous matter?

49. On average, a family of two adults and two children pays $95 per night for lodging and $104 a day for food while on vacation this year. If this increases by 3% over the next year, find the total cost per day for lodging and meals for such a family after the increase.

50. The sales of Tropicana pure orange juice in China were only $100 million this year. Market researchers estimate that sales will increase by 35% next year. Find the amount of orange juice sales estimated for next year. (*Source:* Seagram's Tropicana Beverage Group.)

The graph (pictograph) shows the percent of children 6–11 years of age who are neglecting dental hygiene. Use the information to answer Exercises 51–54.

DOWN IN THE MOUTH

The percentage[1] of children ages 6–11 who are neglecting dental hygiene by:

67% Going to bed without brushing
61% Brushing less than one minute
49% Not flossing
41% Brushing only once a day

[1]Respondents allowed to choose multiple answers.
Source: Services for Crest.

51. What percent of the children brush their teeth before going to bed?

52. What percent of the children floss their teeth?

53. If 3400 children answered the questions for this survey, how many of the children brush less than one minute?

54. How many of the 3400 children in the survey brush only once a day?

55. A recent study examined 48,000 military jobs, such as Army attack helicopter pilot or Navy gunner's mate. It was found that only 960 of these jobs are filled by women. What percent of these jobs are filled by women? (*Source:* Rand's National Defense Research Institute.)

56. There are more than 55,000 words in *Webster's Dictionary,* but most educated people can identify only 20,000 of these words. What percent of the words in the dictionary can these people identify?

57. Ebony Durrant has 7.5% of her earnings deposited into her retirement plan. If $240 per month is deposited in the plan, find her monthly and yearly earnings.

58. About 61% of the 43,000,000 people who receive Social Security benefits are paid with a direct deposit to their bank. How many of the people receiving benefits are paid with a direct deposit?