

6.5 Exercises

FOR
EXTRA
HELP



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Find the part using the percent equation. See Example 1.

1. 25% of 1080 blood donors
2. 19% of 700 shirts
3. 45% of 3000 bath towels
4. 75% of 360 dosages
5. 32% of 260 quarts
6. 44% of 430 liters
7. 140% of 2500 air bags
8. 145% of 580 hamburgers
9. 12.4% of 8300 meters
10. 26.4% of 4700 miles
11. 0.8% of \$520
12. 0.3% of \$480

Find the whole using the percent equation. See Example 2.

13. 24 patients is 15% of what number of patients?
14. 32 classrooms is 20% of what number of classrooms?
15. 40% of what number of salads is 130 salads?
16. 75% of what number of wrenches is 675 wrenches?
17. 476 circuits is 70% of what number of circuits?
18. 270 lab tests is 45% of what number of lab tests?
19. $12\frac{1}{2}\%$ of what number of people is 135 people?
20. $18\frac{1}{2}\%$ of what number of circuit breakers is 370 circuit breakers?
21. $1\frac{1}{4}\%$ of what number of gallons is 3.75 gallons?
22. $2\frac{1}{4}\%$ of what number of files is 9 files?

Find the percent using the percent equation. See Example 3.

23. 70 shipments is what percent of 140 shipments?
24. 180 telemarketers is what percent of 450 telemarketers?
25. 114 tuxedos is what percent of 150 tuxedos?
26. 75 offices is what percent of 125 offices?
27. What percent of \$264 is \$330?
28. What percent of \$480 is \$696?
29. What percent of 160 liters is 2.4 liters?
30. What percent of 600 meters is 7.5 meters?
31. 170 cartons is what percent of 68 cartons?
32. 612 orders is what percent of 425 orders?
33. When using the percent equation, the percent must always be changed to a decimal before doing any calculations. Show and explain how to change a fraction percent to a decimal. Use $2\frac{1}{2}\%$ in your explanation.
34. Suppose a problem on your homework assignment was, "Find $\frac{1}{2}\%$ of \$1300." Your classmates got answers of \$0.65, \$6.50, \$65, and \$650. Which answer is correct? How and why are they getting all of these answers? Explain.

Solve each application problem.

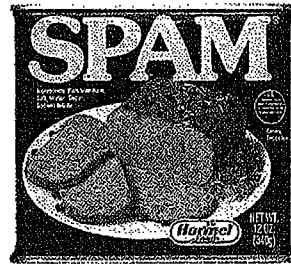
35. A study of office workers found that 27% would like more storage space. If there are 14 million office workers, how many want more storage space? (Source: Steelcase Workplace Index.)

36. Most shampoos contain 75% to 90% water. If a 16-ounce bottle of shampoo contains 78% water, find the number of ounces of water in the bottle. Round to the nearest tenth of an ounce.

37. The household lubricant WD-40 is used in 79% of U.S. homes. If there are 104.2 million U.S. homes, find the number of homes in which WD-40 is used. Round to the nearest tenth of a million.



38. Spam and Spam Lite together accounted for 62.2% of the \$148 million canned lunch meat sales over a 52-week period (the entire year). Find the total annual sales of these products. Round to the nearest hundredth of a million. (Source: Hormel Foods Corporation.)



39. In a recent survey of 1100 employers, it was found that 84% offer only one health plan to employees. How many of these employers offer only one health plan?

40. For a tour of the eastern United States, a travel agent promised a trip of 3300 miles. Exactly 35% of the trip was by air. How many miles were traveled by air?

41. In the United States, 5 of the 50 states have no sales tax. The remaining states do have a sales tax. (Source: *Mathematics for Business, 7e*, Salzman, Miller, Clendenen.)

42. Among the 50 companies receiving the greatest number of U.S. patents last year, 18 were Japanese companies. (Source: *Wall Street Journal*.)

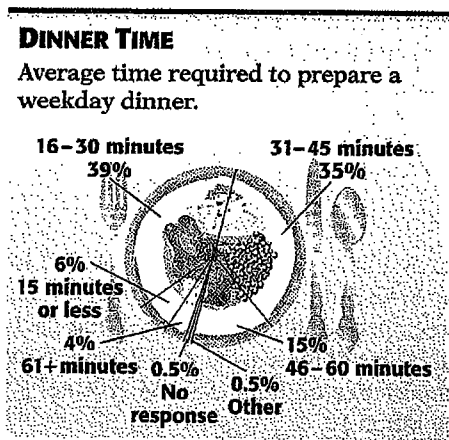
- (a) What percent of the states do not have a sales tax?
(b) What percent have a sales tax?

- (a) What percent of the companies were Japanese companies?
(b) What percent of the companies were not Japanese companies?

43. In a survey of 1250 Americans, 461 rated their health as excellent. What percent of these Americans rate their health as excellent? Round to the nearest tenth of a percent. (Source: National Health Interview Survey.)

44. General Nutrition Center now has 3200 stores and plans to add 450 more stores. Find the percent of additional stores that they have planned.

The graph shows the average time spent preparing weekday dinners. Assume that 5400 people were surveyed to gather this data. Use this graph to answer Exercises 45–48.



Source: The NPD Group.

45. Find the number of people who said they spend “16–30 minutes” preparing weekday dinners.

46. What total number of people answered “No response” and “Other”?

47. How many people said they spend over 30 minutes preparing weekday dinners?

48. Find the number of people who said they spend 30 minutes or less preparing weekday dinners.

49. Chemical Banking Corporation made \$338 million worth of mortgage loans to minorities last year. If this represented 18.6% of all their mortgages, find the total value of all mortgages that they made last year. Round to the nearest tenth of a million.

50. Rachel Williams has 8.5% of her earnings deposited into the credit union. If this amounts to \$131.75 per month, find her annual earnings.

51. The Chevy Camaro was introduced in 1967. Sales that year were 220,917, which was 46.2% of the number of Ford Mustangs sold in the same year. Find the number of Mustangs sold in 1967. Round to the nearest whole number.

52. Chris Goodwin is a waiter and has sales of \$822.25 on Saturday. If this is 28.6% of his sales for the week, find his weekly sales.



53. J & K Mustang has increased the sale of auto parts by $32\frac{1}{2}\%$ over last year. If the sale of parts last year amounted to \$385,200, find the volume of sales this year.

54. An ad for steel-belted radial tires promises 15% better mileage. If mileage had been 25.6 miles per gallon in the past, what mileage could be expected after these tires are installed? Round to the nearest tenth of a mile.

55. A Polaris Vac-Sweep is priced at \$524 with an allowed trade-in of \$125 on an old unit. If sales tax of $7\frac{3}{4}\%$ is charged on the price of the new Polaris unit before the trade-in, find the total cost to the customer after receiving the trade-in. (Hint: Trade-in is subtracted last.)

56. A Sony Personal Entertainment Organizer originally priced at \$248 is marked down 25%. Find the price of the organizer after the markdown.