

4.3 Exercises

Concept Check

Fill-in-the-Blank. Complete each sentence using information found in this section.

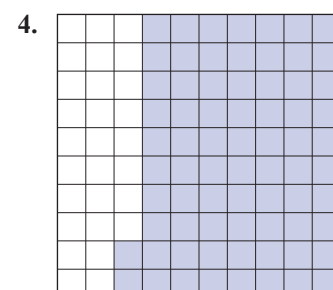
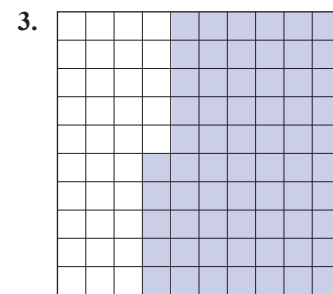
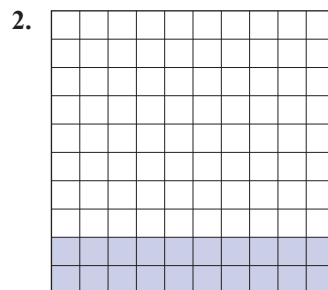
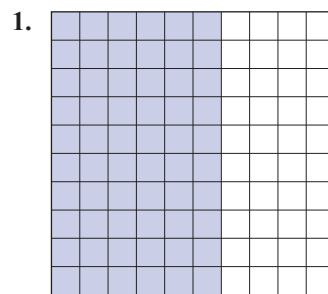
- If 83 out of 100 pieces of paper are shaded, then the shaded pieces of paper make up _____ % of the total.
- Percent is the ratio of a number to _____.
- To change a decimal number to a percent, move the decimal point _____ places to the _____.
- To change a percent to a decimal number, move the decimal point _____ places to the _____.

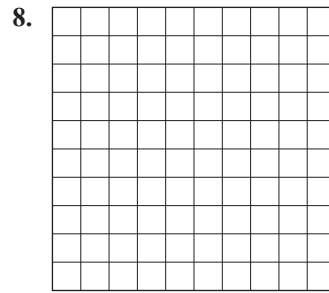
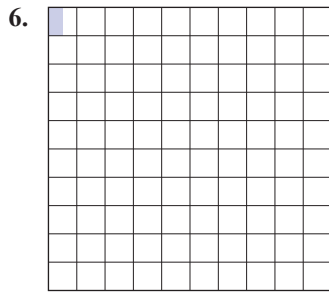
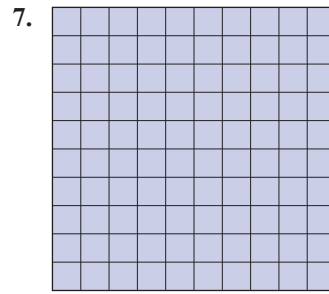
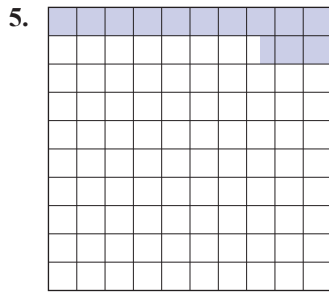
True/False. Determine whether each statement is true or false. If a statement is false, explain how it can be changed so the statement will be true. (**Note:** There may be more than one acceptable change.)

- If a decimal number is less than 1, then the equivalent percent will be less than 100%.
- It is not possible to have a percent greater than 100%.
- A decimal number that is between 0.01 and 0.10 is between 10% and 100%.
- To change from a percent to a decimal, simply omit the percent sign.

Practice

Find the percent of each square that is shaded.





Change each fraction to a percent. See Example 1.

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|----------------------|-----------------------|------------------------|------------------------|
| 9. $\frac{20}{100}$ | 13. $\frac{15}{100}$ | 17. $\frac{13.4}{100}$ | 21. $\frac{0.5}{100}$ |
| 10. $\frac{80}{100}$ | 14. $\frac{53}{100}$ | 18. $\frac{99.9}{100}$ | 22. $\frac{0.2}{100}$ |
| 11. $\frac{9}{100}$ | 15. $\frac{125}{100}$ | 19. $\frac{0.48}{100}$ | 23. $\frac{2.14}{100}$ |
| 12. $\frac{7}{100}$ | 16. $\frac{336}{100}$ | 20. $\frac{0.53}{100}$ | 24. $\frac{1.62}{100}$ |

Change each decimal number to a percent. See Example 2.

- | | | | |
|----------|-----------|-----------|----------|
| 25. 0.02 | 30. 0.52 | 35. 0.005 | 40. 1.75 |
| 26. 0.09 | 31. 0.40 | 36. 0.004 | 41. 2.3 |
| 27. 0.1 | 32. 0.60 | 37. 0.128 | 42. 6.7 |
| 28. 0.7 | 33. 0.025 | 38. 0.368 | 43. 2 |
| 29. 0.36 | 34. 0.035 | 39. 1.12 | 44. 25 |

Change each percent to a decimal number. See Example 3.

- | | | | |
|---------|----------|-----------|-----------|
| 45. 2% | 50. 75% | 55. 120% | 60. 10.1% |
| 46. 7% | 51. 20% | 56. 150% | 61. 0.26% |
| 47. 18% | 52. 30% | 57. 6.5% | 62. 0.52% |
| 48. 42% | 53. 125% | 58. 2.5% | 63. 1.37% |
| 49. 25% | 54. 179% | 59. 17.3% | 64. 2.44% |

Applications

Solve.

65. In calculating his sales commission, Mr. Howard multiplies by the decimal 0.12. Change 0.12 to a percent.
66. To calculate what your maximum house payment should be, a banker multiplied your income by 0.28. Change 0.28 to a percent.
67. The discount you earn by paying cash is found by multiplying the amount of your purchase by 0.02. Change 0.02 to a percent.
68. A savings account is offering an interest rate of 0.04 for the first year after opening the account. Change 0.04 to a percent.
69. Suppose the state license fee is figured by multiplying the cost of your car by 0.065. Change 0.065 to a percent.
70. The interest rate on a loan is 6.4%. Change 6.4% to a decimal.
71. The sales commission for the clerk at a retail store is figured at 8.5%. Change 8.5% to a decimal.
72. Suppose that sales tax is figured at 7.25%. Change 7.25% to a decimal.
73. At Mr. Jones' sporting goods store, the rate of profit based on sales price is 45%. Change 45% to a decimal.
74. The discount during a special sale on dresses is 30%. Change 30% to a decimal.
75. According to the last US Census, per capita property taxes in New Jersey were 523% higher than those in Alabama. Write 523% as a decimal.
76. According to the Aluminum Association, the percentage of aluminum cans recycled in 2015 was 64.3%, and this percentage fell to 63.6% in 2018. Write 64.3% and 63.6% as decimals.

Writing & Thinking

77. Describe the relationship between percent and the number 100.
78. Describe a situation where more than 100% is possible. Describe a situation where it is impossible to have more than 100%.
79. Compare and contrast the process for converting percents to decimal numbers and changing decimal numbers to percents.