## Lesson 6.4 Real-World Problems: Percent

## Solve. Show your work. Check that your answers are reasonable.

- **1.** Ella collects 50 bottles to recycle. Of the bottles she collects, 19 are plastic and the rest are glass.
  - a) What percent of the bottles are plastic?
  - **b)** What percent of the bottles are glass?
- **2.** A salesperson receives a 5% commission on the sale of each car. If the commission on a car is \$490, what is the price of the car?

**3.** Ms. Jolla has a budget of \$1,000 to buy a television set. The price of the television set she wants to buy is \$950. Does Ms. Jolla have enough money to purchase the television set given that the sales tax is 7%? Explain your reasoning.

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**4.** Darrell and his three cousins are dining at a restaurant. Their bill is for \$60 worth of food plus an additional 15% of the total for service charge. How much does each person pay if they share the bill equally?

- **5.** Diana invests \$25,000 in a bank at the beginning of the year. She will receive 7% interest at the end of the year, but she will have to pay a 16% tax on the interest received.
  - a) How much interest will Diana earn after she pays the tax?

**b)** What percent of Diana's investment is the interest after paying the tax?

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6. Two types of sandwiches were made for a tea party. 55% of the sandwiches were cheese sandwiches and the rest were chicken sandwiches. If there were 252 chicken sandwiches, how many sandwiches were made altogether?

**7.** Lee buys a computer and a printer for \$2,028. The printer costs 30% of the price of the computer. What is the price of the computer?

**8.** Ali, Ben, and Cliff plant seedlings in their neighborhood park. Ali plants 40% of the total number of seedlings, Ben plants 45% of the total number of seedlings, and Cliff plants the rest of the seedlings. If Cliff plants 87 seedlings, how many seedlings do the three boys plant altogether?

**11.** 100% - 20% - 40% = 40% $240 \times 40\% = 96$ Joanna makes 96 egg salad sandwiches. **12.** 100% - 50% - 35% = 15%  $\frac{15}{100} \times 1,640 = 246$ 246 students walk to school. **13.** 60% → 720  $1\% \rightarrow 720 \div 60 = 12$  $100\% \rightarrow 12 \times 100 = 1,200$ There are 1,200 balls in the ball pit. **14.** 28% → \$350  $1\% \rightarrow \$350 \div 28 = \$12.50$  $100\% \rightarrow 12.50 \times 100 = $1,250$ His total savings is \$1,250. **15. a)** 62% → 310  $1\% \rightarrow \$310 \div 62 = 5$  $100\% \rightarrow 5 \times 100 = 500$ There are 500 pages in the book. **b)** 100% - 62% = 38%  $38\% \times 500 = 190$ 190 pages in the book have no pictures. **16.** a) 95% × 400 = 380 380 students are at the school carnival. **b)** 100% - 55% = 45%  $45\% \times 380 = 171$ 171 students at the school carnival are girls. c) 100% - 95% = 5% $5\% \times 400 = 20$ 20 teachers are at the school carnival. **d)** 100% - 35% = 65%  $65\% \times 20 = 13$ There are 13 female teachers at the school carnival. **17.** a) 55% × 1,800 = 990 girls 990 students enrolled in school are girls. **b)** 30% × 990 = 297 girls 297 girls take the bus to school. c) 1,800 - 990 = 810 boys  $70\% \times 810 = 567$ 567 boys take the bus to school. **18.** 30% × 160 = 48 apples Pears and oranges: 160 - 48 = 112Oranges: 100% - 25% = 75%  $75\% \times 112 = 84$  oranges 84 oranges are in the box. **19.** Cost of the dress: 30% × \$450 = \$135 \$450 - \$135 = \$315 Money left: 100% - 20% = 80%80% × \$315 = \$252 Susan has \$252 left.

## Lesson 6.4

**1. a)**  $\frac{19}{50} \times 100\% = 38\%$ **b)**  $\frac{31}{50} \times 100\% = 62\%$ **2.** 5%  $\rightarrow$  \$490  $1\% \rightarrow \frac{490}{5} = 98$  $100\% \rightarrow 100 \times \$98 = \$9.800$ **3.** Tax  $\rightarrow$  7% × \$950 = \$66.50 950 + 66.50 = 1,016.501,016.50 - 1,000 = 16.50No, she does not have enough money to buy the television set. The cost, including tax, is \$1,016.50 for the television set, which is \$16.50 more than her budgeted amount. **4.** Service charge =  $\frac{15}{100} \times $60 = $9$ Total = \$60 + \$9 = \$69 $\$69 \div 4 = \$17.25$ Each person pays \$17.25. **5.** a) Interest = 7% × \$25,000 = \$1,750  $Tax = 16\% \times $1,750 = $280$ Actual interest = \$1,750 - \$280 = \$1,470 Diana will receive \$1,470 after paying the tax. **b**)  $\frac{1,470}{25,000} \times 100\% = 5.88\%$ The interest is 5.88% of Diana's investment after paying the tax. **6.** 100% - 55% = 45%  $45\% \rightarrow 252$  $1\% \rightarrow \frac{252}{45}$  $100\% \rightarrow \frac{252}{45} \times 100 = 560$ 560 sandwiches were made altogether. 7. Computer 100% \$2,028 Printer 30%  $130\% \rightarrow 2,028$  $100\% \rightarrow \frac{2,028}{130} \times 100 = 1,560$ The price of the computer is \$1,560. **8.** 100% - 40% - 45% = 15% $15\% \rightarrow 87$  $1\% \rightarrow \frac{87}{15}$  $100\% \rightarrow \frac{87}{15} \times 100 = 580$ The three boys plant 580 seedlings altogether.