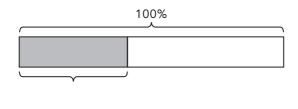
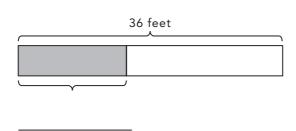
Lesson 6.3 Percent of a Quantity

Solve. Use the models to help you.

1. What is 45% of 36 feet?





Find the quantity represented by each percent.

- **2.** 35% of 125 miles _____
- **3.** 46% of 340 gallons _____
- **4.** 65% of 180 pounds _____
- **5.** 75% of 72 hours _____

Find the missing value.

- **6.** 18% of ______ is 99.
- **7.** 92% of ______ is 345.
- **8.** 55% of ______ is 143.
- **9.** 47% of ______ is 141.

Solve. Show your work.

10. There are 325 children at a zoo. If 64% of the children are boys and the rest are girls, how many children at the zoo are girls?

11. Of the 240 sandwiches Joanna makes, 20% are tuna sandwiches, 40% are ham sandwiches, and the rest are egg salad sandwiches. How many egg salad sandwiches does Joanna make?

12. Of the 1,640 students enrolled at a school, 50% come to school by bus, 35% come by car, and the rest of the students walk to school. How many students walk to school?

13. A ball pit at a play area is filled with red and yellow balls. Of the total number of balls, 60% are red. If there are 720 red balls, how many balls are in the ball pit?

14. 28% of the amount in Keith's savings is \$350. How much money does Keith have in his savings?

60

- **15.** Of the total number of pages in a book, 62% have pictures and the rest have no pictures. There are 310 pages with pictures in the book.
 - a) What is the total number of pages in the book?

b) How many pages in the book have no pictures?

- **16.** Of the 400 people at the school carnival, 95% are students and the rest are teachers.
 - a) How many students are at the school carnival?

b) If 55% of the students at the school carnival are boys, how many are girls?

c) How many teachers are at the school carnival?

d) If 35% of the teachers are male and the rest are female, how many female teachers are at the carnival?

- **17.** Of the 1,800 students enrolled in school, 55% are girls. Of the girls attending this school, 30% take the bus to school. Of the boys attending the school, 70% take the bus to school.
 - a) How many students enrolled in school are girls?
 - **b)** How many girls take the bus to school?
 - c) How many boys take the bus to school?
- **18.** A box contains 160 fruits. Of the total number of fruits in the box, 30% are apples. 25% of the remaining fruits in the box are pears, and the rest of the fruits in the box are oranges. How many oranges are in the box?

19. Susan has \$450. She uses 30% of her money to buy a dress and 20% of the remainder to buy a pair of shoes. How much money does she have left?

62

Brain @ Work

1. $14.4 \times 1,000 = 14,400 \text{ mL}$ 1 minute \rightarrow 140 + 100 = 240 mL

$$\frac{14,400}{240}$$
 = 60 min = 1 h

It will take 1 hour to fill the fish tank completely.

2. $4.8 \times 1,000 = 4,800 \text{ mL}$

Water leaking out of the tank in 1 minute \rightarrow 270 - 150 = 120 mL

 $4,800 \div 120 = 40 \text{ min}$

It will take 40 minutes to empty the tank.

Chapter 6

Lesson 6.1

- 7. $6\frac{49}{50}$
- 9. 0.08
- **10.** 0.32
- **11.** 0.85
- **12.** 0.99
- **13.** 1.3
- **14.** 5.68
- **15.** 2.85
- **16.** 3.8
- **17.** $\frac{45}{300} \times 100\% = 15\%$

15% of the animals in the zoo are birds.

18. $\frac{98}{400} \times 100\% = 24\frac{1}{2}$

 $24\frac{1}{2}$ % of the vehicles that passed the intersection are buses.

19. Boys \rightarrow 400 - 180 = 220

$$\frac{220}{400} = 55\%$$

55% of the students at the basketball game are boys.

20. Correct \rightarrow 30 - 12 = 18

$$\frac{18}{30} \times 100\% = 60\%$$

He answered 60% of the questions correctly.

21. Total = 12 + 20 + 8 = 40

$$\frac{12}{40} \times 100\% = 30\%$$

30% of the muffins are blueberry.

22. Total = 23 + 40 + 28 + 52 + 77= 220

$$\frac{77}{220} \times 100\% = 35\%$$

35% of the books were sold on Friday.

Lesson 6.2

- 1. 80%
- **2.** $62\frac{1}{2}\%$
- 3. $53\frac{1}{2}\%$
- **4.** 175%
- **5.** 370%
- **6.** 245%

- **7.** 8%
- **8.** 56%
- 9. 90% **11.** 275%
- **10.** 107% **12.** 350%
- **14.** $\frac{0.0}{200}$

17.

- 20. 58%
- **19.** 43% **21.** 61%
- **22.** 40%
- **23.** Total amount = 2.85 kg + 3.15 kg

$$\frac{2.85}{6} \times 100\% = 47\frac{1}{2}\%$$

 $47\frac{1}{2}\%$ of the mixture is sugar.

24. a) Total = 30 + 15 + 40 + 25 + 10

$$\frac{40}{120} \times 100\% = 33\frac{1}{3}\%$$

 $33\frac{1}{3}\%$ of students surveyed prefer strawberries.

b) $\frac{10}{120} \times 100\% = 8\frac{1}{3}\%$

 $8\frac{1}{2}$ % of students surveyed prefer the least favorite fruit (peaches).

c) 30 + 25 = 55

$$\frac{55}{120} \times 100\% = 45\frac{5}{6}\%$$

 $45\frac{5}{4}\%$ of students surveyed prefer apples or pears.

Lesson 6.3

1. $100\% \rightarrow 36 \text{ ft}$

$$1\% \rightarrow \frac{36}{100}$$

$$45\% \rightarrow \frac{36}{100} \times 45 = 16.2 \text{ feet}$$

- **2.** $43\frac{3}{4}\%$ miles
- **3.** 156²/₅ gallons
- **4.** 117 pounds
- **5.** 54 hours
- **6.** 550
- **7.** 375
- **8.** 260
- **9.** 300
- **10.** 100% 64% = 36% $36\% \times 325 = 117$

117 children at the zoo are girls.

11. 100% - 20% - 40% = 40% $240 \times 40\% = 96$

Joanna makes 96 egg salad sandwiches. **12.** 100% - 50% - 35% = 15%

 $\frac{15}{100}$ × 1,640 = 246

246 students walk to school.

- **13.** $60\% \rightarrow 720$ $1\% \rightarrow 720 \div 60 = 12$ $100\% \rightarrow 12 \times 100 = 1,200$ There are 1,200 balls in the ball pit.
- **14.** $28\% \rightarrow 350 $1\% \rightarrow \$350 \div 28 = \12.50 $100\% \rightarrow 12.50 \times 100 = \$1,250$ His total savings is \$1,250.
- **15.** a) $62\% \rightarrow 310$ $1\% \rightarrow \$310 \div 62 = 5$ $100\% \rightarrow 5 \times 100 = 500$ 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) $95\% \times 400 = 380$ 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) $55\% \times 1,800 = 990$ girls 990 students enrolled in school are girls.
 - **b)** $30\% \times 990 = 297$ 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.** $30\% \times 160 = 48$ apples Pears and oranges: 160 - 48 = 112

Oranges: 100% - 25% = 75% $75\% \times 112 = 84$ oranges

84 oranges are in the box. 19. Cost of the dress: $30\% \times 450 = \$135\$450 - \$135 = \$315

Money left: 100% - 20% = 80% $80\% \times \$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 = \$1,016.50\$1,016.50 - \$1,000 = \$16.50

> No, 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 = $\frac{15}{100}$ × \$60 = \$9

Total = \$60 + \$9 = \$69 $$69 \div 4 = 17.25

Each person pays \$17.25.

5. a) Interest = $7\% \times $25,000$ = \$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%

$$45\% \rightarrow 252$$

$$1\% \rightarrow \frac{252}{}$$

$$1\% \rightarrow \frac{252}{45}$$

$$100\% \to \frac{252}{45} \times 100 = 560$$

560 sandwiches were made altogether.

7. Computer Printer

 $130\% \rightarrow 2,028$ $100\% \rightarrow \frac{2,028}{130} \times 100 = 1,560$

The price of the computer is \$1,560.

8. 100% - 40% - 45% = 15%

$$15\% \rightarrow 87$$

$$1\% \rightarrow \frac{87}{15}$$

$$100\% \to \frac{87}{15} \times 100 = 580$$

The three boys plant 580 seedlings altogether.