

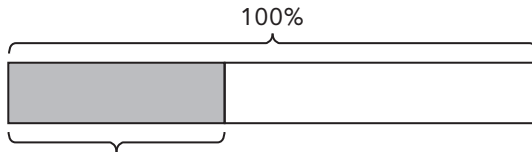
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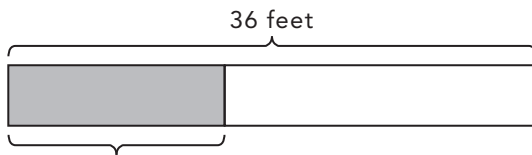
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Lesson 6.3 Percent of a Quantity

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.

Name: _____

Date: _____

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?

Brain @ Work

- $14.4 \times 1,000 = 14,400$ 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.
- $4.8 \times 1,000 = 4,800$ mL
Water leaking out of the tank in 1 minute \rightarrow
 $270 - 150 = 120$ mL
 $4,800 \div 120 = 40$ min
It will take 40 minutes to empty the tank.

Chapter 6

Lesson 6.1

- $\frac{6}{25}$
 - $\frac{24}{25}$
 - $1\frac{7}{25}$
 - $1\frac{1}{2}$
 - $2\frac{1}{4}$
 - $3\frac{3}{5}$
 - $6\frac{49}{50}$
 - $7\frac{3}{4}$
 - 0.08
 - 0.32
 - 0.85
 - 0.99
 - 1.3
 - 5.68
 - 2.85
 - 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

- 80%
 - $62\frac{1}{2}\%$
 - $53\frac{1}{3}\%$
 - 175%
 - 370%
 - 245%
 - 8%
 - 56%
 - 90%
 - 107%
 - 275%
 - 350%
 - $\frac{33}{400}$
 - $\frac{61}{200}$
 - $\frac{1}{3}$
 - $\frac{5}{12}$
 - $\frac{9}{16}$
 - $\frac{7}{8}$
 - 43%
 - 58%
 - 61%
 - 40%
 - Total amount = 2.85 kg + 3.15 kg
= 6 kg
 $\frac{2.85}{6} \times 100\% = 47\frac{1}{2}\%$
 $47\frac{1}{2}\%$ of the mixture is sugar.
24. a) Total = $30 + 15 + 40 + 25 + 10 = 120$
 $\frac{40}{120} \times 100\% = 33\frac{1}{3}\%$
 $33\frac{1}{3}\%$ of students surveyed prefer strawberries.
- b) $\frac{10}{120} \times 100\% = 8\frac{1}{3}\%$
 $8\frac{1}{3}\%$ of students surveyed prefer the least favorite fruit (peaches).
- c) $30 + 25 = 55$
 $\frac{55}{120} \times 100\% = 45\frac{5}{6}\%$
 $45\frac{5}{6}\%$ of students surveyed prefer apples or pears.

Lesson 6.3

- 100% $\rightarrow 36$ ft
1% $\rightarrow \frac{36}{100}$
 $45\% \rightarrow \frac{36}{100} \times 45 = 16.2$ feet
- $43\frac{3}{4}\%$ miles
- $156\frac{2}{5}$ gallons
- 117 pounds
- 54 hours
- 550
- 375
- 260
- 300
- 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. $100\% - 50\% - 35\% = 15\%$
 $\frac{15}{100} \times 1,640 = 246$
 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\% \times \$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} \times \$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. $100\% - 55\% = 45\%$
 $45\% \rightarrow 252$
 $1\% \rightarrow \frac{252}{45}$
 $100\% \rightarrow \frac{252}{45} \times 100 = 560$
 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.