

Lesson 1

Audio Tutor 2/17 Listen and Understand

Find a Percent of a Number

Objective Find a percent of a number.

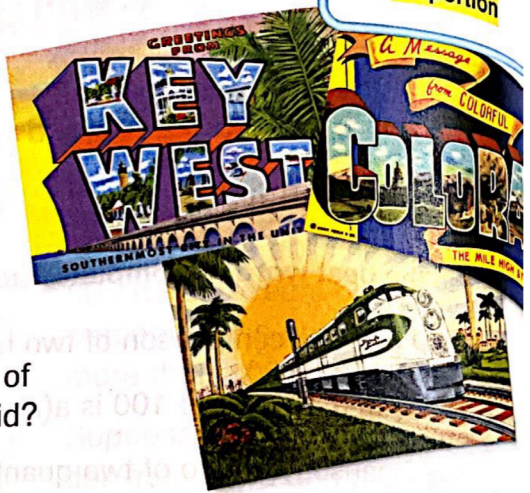
Vocabulary
proportion

Learn About It

Collecting and studying postcards is the fourth most popular hobby in the United States. Many collectors buy postcards through Internet auction sites.

If Jameson's e-bid on a postcard collection was 20% of the final selling price of \$47.50, how much was his bid?

Find 20% of \$47.50.



Different Ways to Find a Percent of a Number

Way 1 You can write and solve a proportion.

STEP 1 Write a **proportion**, using part-to-whole ratios.

$$\begin{array}{l} \text{part} \rightarrow \frac{20}{100} = \frac{n}{47.50} \leftarrow \text{part (Jameson's bid)} \\ \text{whole} \rightarrow \end{array}$$

STEP 2 Solve for n .

$$\begin{array}{l} \frac{20}{100} \times \frac{n}{47.50} \\ 20 \times 47.50 = 100 \times n \leftarrow \text{Cross multiply.} \\ 950 = 100n \\ 9.50 = n \end{array}$$

Way 2 You can write and solve an equation.

STEP 1 Write an equation, using the decimal form of the percent.

$$n = 0.20 \times 47.50$$

$$20\% = \frac{20}{100} = 0.20$$

STEP 2 Solve for n .

$$n = 9.50$$

Check your work.

- 10% of \$47.50 is \$4.75, or about \$5.
- So, 20% of \$47.50 is about $2 \times \$5 = \10 .
- The answer is reasonable.

Solution: Jameson's bid was \$9.50.

Guided Practice

Find the percent of each number.

1. 70% of 100

2. 35% of 317

3. $6\frac{1}{2}\%$ of 88

4. 45% of 1

5. 250% of 18.5

6. 1.8% of 50

Explain Your Thinking Why can a ratio represent a percent?

Ask Yourself

- How do I write a percent as a ratio?
- How do I write a percent as a decimal?

Practice and Problem Solving

Use a proportion to find the percent of each number.

7. 40% of 220
8. 20% of 66
9. 100% of 15
10. 99% of 1
11. 1% of 19
12. 105% of 6
13. 382% of 1,000
14. 23.5% of 48
15. 3.6% of 998
16. 4.4% of 112
17. 87% of 78
18. 33% of 33

Use an equation to find the percent of each number.

19. 60% of 150
20. 10% of 212
21. 90% of 210
22. 10% of 189
23. 45% of 92
24. 18% of 18
25. 1% of 300
26. 6% of 124
27. 101% of 5
28. 115% of 200
29. 11.5% of 76
30. 3.5% of 160

Find the percent of each number. Use either method.

31. 12.1% of 100
32. 15.6% of 47
33. 97.3% of 17
34. 56% of 143

Solve.

35. Felicia has 325 postcards in her collection. Sixty percent of the cards are from Japan. How many postcards are from Japan? How many are from places other than Japan?
36. Bill has 40 postcards from Mexico. He bought 20 percent of the cards at collectors' shows and 65 percent at on-line auctions. The rest were gifts from friends. How many postcards were gifts?

37. **Analyze** The table shows the prices of postcards at Hector's Hobby Shop. Given this pattern of pricing, how much will 7 cards cost? Explain your answer.

Number of Postcards	1	2	3	4	5
Price	45¢	85¢	\$1.20	\$1.50	\$1.75

38. **Explain** When you find a percent of a number, how can you tell if your answer will be less than or greater than the given number?

Mixed Review and Test Prep

Open Response

Complete. (Ch. 8, Lesson 2)

39. 1 gal = qt
40. 3 pt = c
41. pt = 2 gal
42. 12 c = qt
43. 32 oz = lb
44. T = 10,000 lb
45. 36 in. = yd
46. ft = 36 in.

Multiple Choice

47. A mural covers 96 square feet of a wall. Twenty-five percent of the mural is black. How many square feet are not black? (Ch. 18, Lesson 1)
 - A 24 ft²
 - B 72 ft²
 - C 93.6 ft²
 - D 2,496 ft²

Find a Percent of a Number

Use a proportion to find the percent of each number.

1. 40% of 250 _____
 2. 35% of 20 _____
 3. 2% of 10 _____

4. 15.6% of 120 _____
 5. 110% of 78 _____
 6. 65% of 80 _____

7. 15% of 300 _____
 8. 72% of 175 _____
 9. 87% of 246 _____

Use an equation to find the percent of each number.

10. 73% of 28 _____
 11. 35% of 98 _____
 12. 12.5% of 60 _____

13. 14% of 28 _____
 14. 156% of 90 _____
 15. 4.2% of 68 _____

16. 76% of 95 _____
 17. 112% of 42 _____
 18. 10.6% of 72 _____

Find the percent of each number. Use either method.

19. 110% of 75 _____
 20. 5.8% of 50 _____
 21. 87% of 246 _____

22. 89% of 245 _____
 23. 200% of 29 _____
 24. 101% of 200 _____

Test Prep

25. Molly made a quilt that measures 60 inches by 72 inches. If 20% of the quilt was cut from blue fabric, what area of the quilt is not blue?
26. Mark made 75% of a recipe for pancakes. If the recipe called for 2 cups of flour, how much flour did Mark use? Explain how you found your answer.

- A 4,320 sq in. C 3,240 sq in.
 B 3,456 sq in. D 864 sq in.