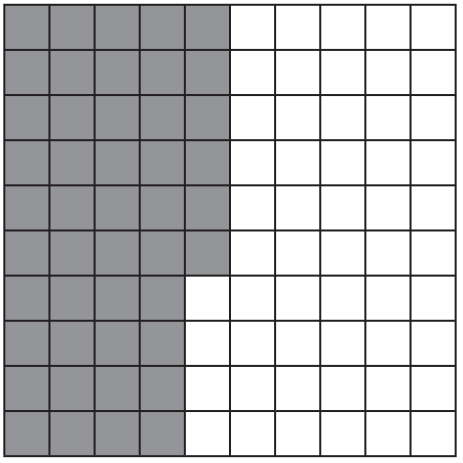
Name: _____ Date: _____

Chapter 10 Percent

Practice 1 Percent

Each large square is divided into 100 parts.
Fill in the blanks to describe each large square.

1.



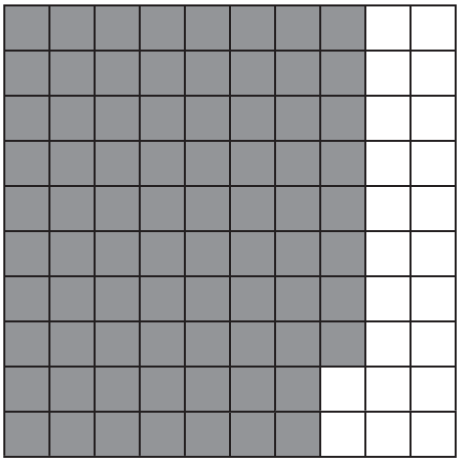
_____ out of 100 equal parts are shaded.

_____% of the large square is shaded.

_____ out of 100 equal parts are not shaded.

_____% of the large square is not shaded.

2.



_____ out of 100 equal parts are shaded.

_____% of the large square is shaded.

_____ out of 100 equal parts are not shaded.

_____% of the large square is not shaded.

Express each fraction as a percent.

Example

$\frac{38}{100} = \underline{38}\%$

3. $\frac{92}{100} = \underline{\quad}\%$

4. $\frac{7}{100} = \underline{\quad}\%$

5. $\frac{19}{100} = \underline{\quad}\%$

6. $\frac{6}{10} = \underline{\quad}\%$

7. $\frac{4}{10} = \underline{\quad}\%$

Express each decimal as a percent.

Example

$0.15 = \frac{15}{100}$

$= \underline{15}\%$

8. $0.28 = \frac{\square}{100}$

$= \underline{\quad}\%$

9. $0.07 = \underline{\quad}\%$

10. $0.01 = \underline{\quad}\%$

11. $0.08 = \underline{\quad}\%$

12. $0.5 = \underline{\quad}\%$

13. $0.9 = \underline{\quad}\%$

14. $0.8 = \underline{\quad}\%$

Express each percent as a fraction with a denominator of 100.

Example

$53\% = \frac{53}{100}$

15. $7\% = \frac{\square}{100}$

16. $13\% = \square$

17. $31\% = \square$

18. $5\% = \square$

19. $79\% = \square$

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Express each percent as a fraction in simplest form.

Example

$5\% = \frac{5}{100}$

$= \frac{1}{20}$

20. $25\% = \frac{\square}{100}$

$= \frac{\square}{\square}$

21. $75\% = \frac{\square}{\square}$

22. $84\% = \frac{\square}{\square}$

23. $46\% = \frac{\square}{\square}$

24. $55\% = \frac{\square}{\square}$

Express each percent as a decimal.

Example

$27\% = \frac{27}{100}$

$= 0.27$

25. $58\% = \frac{\square}{100}$

$= \_\_\_\_\_$

26. $9\% = \_\_\_\_\_$

27. $1\% = \_\_\_\_\_$

Write each ratio as a fraction and then as a percent.

		As a Fraction	As a Percent
28.	23 out of 100		
29.	9 out of 10		

Express each percent as a decimal. Then mark ✗ to show where each decimal is located on the number line.

30. 71% = _____ **31.** 19% = _____ **32.** 44% = _____

Solve. Show your work.

33. There are 100 students in a drawing contest, and 58 of them are girls.

a. What percent of the students in the contest are girls?

b. What percent of the students in the contest are boys?

34. A jogging route is 10 kilometers long. Lee Ming has jogged 4 kilometers of the route.

a. What percent of the route has Lee Ming jogged?

b. What percent of the route does Lee Ming have to jog to complete the whole route?

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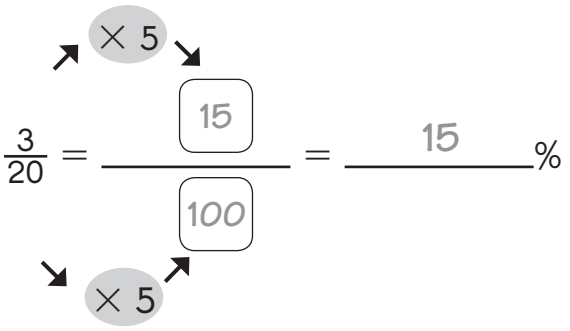
Practice 2 Expressing Fractions as Percents

Express each fraction as a percent.

Example



1. $\frac{26}{50} =$ _____ %

2. $\frac{4}{5} =$ _____ %

3. $\frac{19}{25} =$ _____ %

4. $\frac{1}{4} =$ _____ %

Express each fraction as a percent.

Example

$\frac{1}{5} = \frac{1}{5} \times 100\% =$ 20 %

5. $\frac{31}{50} = \square \times$ _____ % = _____ %

6. $\frac{9}{10} = \square \times$ _____ % = _____ %

7. $\frac{13}{20} = \square \times$ _____ % = _____ %

Express each fraction as a percent.
Use the model to help you.

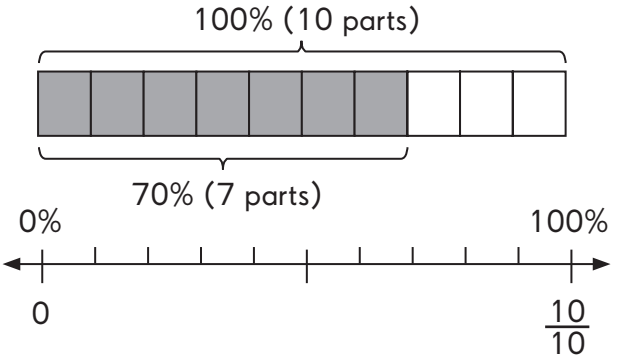
Example

$\frac{7}{10}$

10 parts → 100 %

1 part → 10 %

7 parts → 70 %

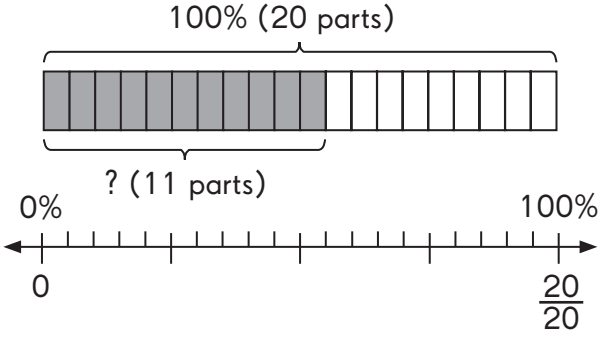


8. $\frac{11}{20}$

20 parts → _____ %

1 part → _____ %

11 parts → _____ %

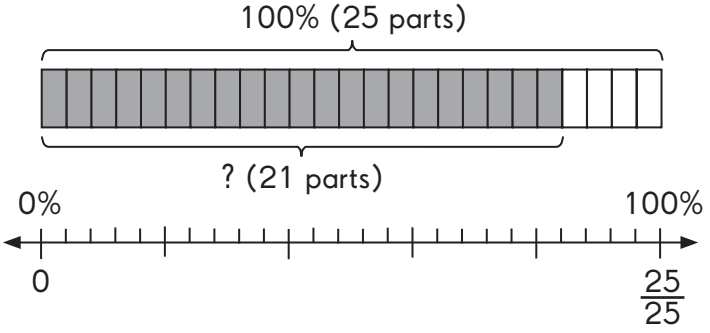


9. $\frac{21}{25}$

25 parts → _____ %

1 part → _____ %

21 parts → _____ %



Express each fraction as a percent.

10. $\frac{64}{200} = \frac{32}{100} =$ _____ %

11. $\frac{130}{400} =$ _____ %

12. $\frac{480}{600} =$ _____ %

13. $\frac{518}{700} =$ _____ %

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Solve. Show your work.

14. Jeremy finished $\frac{3}{5}$ of his homework. What percent of his homework did he finish?

15. Tracy ran in a marathon, but managed to complete only $\frac{13}{20}$ of the race.

a. What percent of the marathon did she complete?

b. What percent of the marathon did she not complete?

Solve. Show your work.

16. Katie bought some flour. She used $\frac{3}{8}$ of it to bake bread.

What percent of the flour is left?

17. There are 800 members in an astronomy club, and 320 of them are females. What percent of the members are males?

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Practice 3 Percent of a Number

Multiply.

1. 25% × 84 = _____

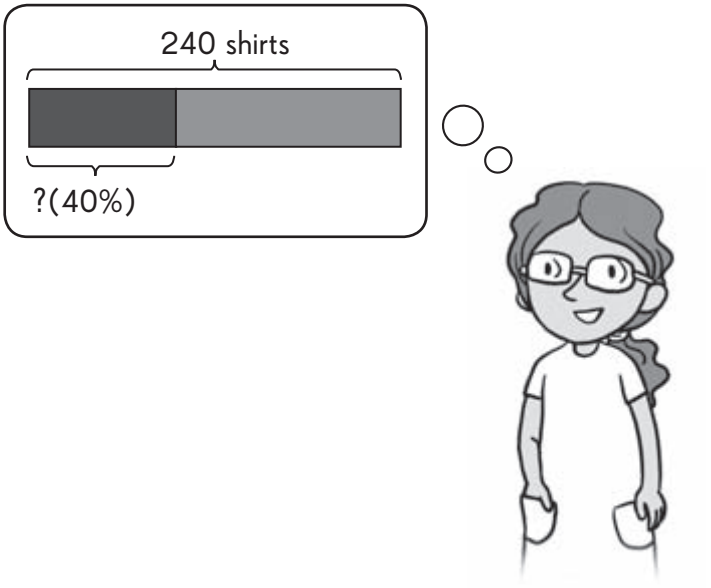
2. 36% × 75 = _____

3. 40% of 680 = _____

4. 55% of 720 = _____

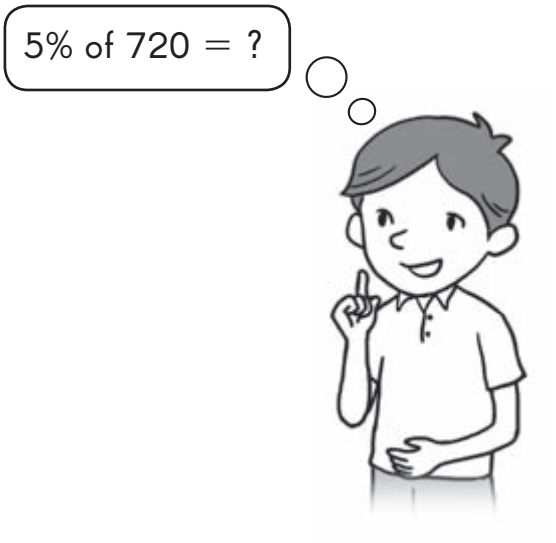
Solve. Show your work.

5. Of the 240 shirts on a rack, 40% are size medium. How many shirts on the rack are size medium?



Solve. Show your work.

6. There are 720 students in a school. One rainy day, 5% of the students were absent. How many students were absent?



7. Jenny made 200 bracelets. She sold 64% of the bracelets at a craft fair.

a. How many bracelets did she sell?

b. How many bracelets were not sold?

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Solve. Show your work.

8. There were 12,000 spectators in one section of the stadium. In that section, 55% had on red shirts and the rest had on white shirts. How many spectators had on white shirts?

9. Mrs. Patel went shopping with $120. She spent 12% of the money on meat, and 25% on vegetables. How much money did she have left?

Solve. Show your work.

10. A vendor sells three types of watches. Of the watches in stock, 20% are men's watches, 40% are ladies' watches and the rest are children's watches. There are 250 watches altogether. How many children's watches are there?

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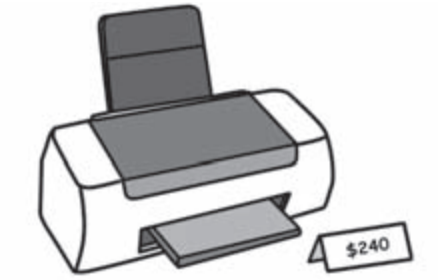
Practice 4 Real-World Problems: Percent

Solve. Show your work.

1. Jennifer bought a printer that cost $240. There was a 7% sales tax on the printer.

a. How much sales tax did Jennifer pay?



b. How much did Jennifer pay for the printer with tax?

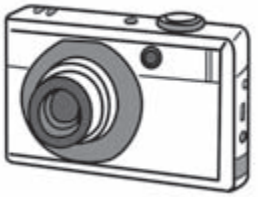
2. A company invests $8,000 in an account that pays 6% interest per year.

a. How much interest will the company earn at the end of 1 year?

b. How much money will the company have in the account at the end of 1 year?

Solve. Show your work.

3. The regular price of a digital camera was $250. Tyrone bought the digital camera at a discount of 40%. How much did Tyrone pay for the digital camera?



4. Len bought a new car for $22,500. After a few years, he sold the car at a discount of 25%. What was the selling price of the car?

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Solve. Show your work.

5. The price for dinner in a restaurant was $80. The customer paid an additional 7% meals tax and left a $15 tip.

a. How much meals tax did the customer pay?

b. How much did the customer spend altogether in the restaurant?

6. The regular price of a pair of hockey skates was $250. Ron bought the skates at a discount of 8%. However, he had to pay 5% sales tax on the skates after the discount.

a. What was the selling price of the skates?

b. How much did Ron pay for the skates in total?

Math Journal

Arnold had dinner at a restaurant with his family. The dinner cost $72. In addition, he paid 7% meals tax on the dinner. How much did Arnold pay for the dinner?

Tyrone worked out the answer using his calculator like this:

$$93\% \times \$72 = \$66.96$$

Brandon worked out the answer using his calculator like this:

$$107\% \times \$72 = \$77.04$$

Whose answer is correct? Explain why his answer is correct.

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Put On Your Thinking Cap!

Challenging Practice

Solve. Show your work.

1. Mr. Stanton bought a cell phone at 80% of the regular price. The regular price of the phone was $450. Mr. Wilson bought the same cell phone but paid $500 for it. How much more did Mr. Wilson pay than Mr. Stanton?

2. Helen has 30 tickets. Gina has 20 more tickets than Helen. What percent of her tickets must Gina give Helen so that both of them have the same number of tickets?

Put On Your Thinking Cap!

Problem Solving

Solve. Show your work.

Michelle collects U.S., Canadian, and Mexican stamps. In her collection, 80% of the stamps are U.S. and Mexican stamps. There are 3 times as many U.S. stamps as Mexican stamps. What percent of Michelle's collection is made up of U.S. stamps?