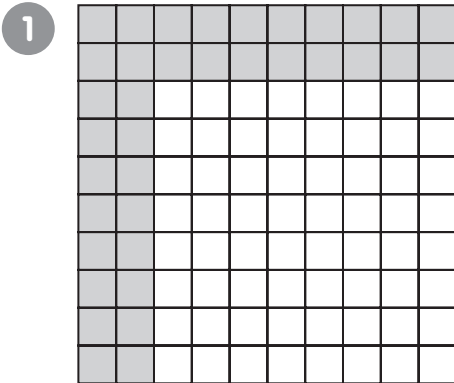


# Chapter 10 Extra Practice and Homework

## Percent

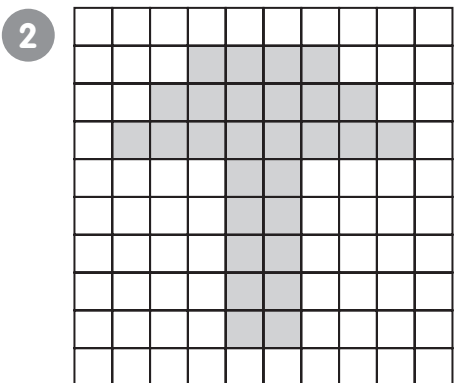
### Activity 1 Percent

Fill in each blank.



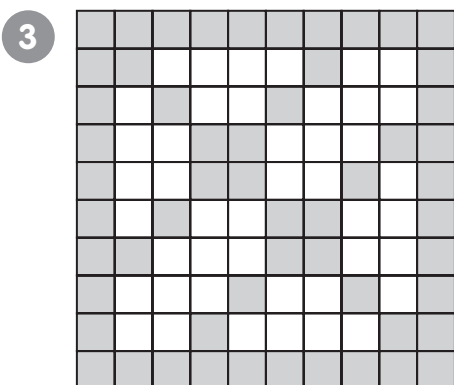
\_\_\_\_\_ % of the whole figure is shaded.

\_\_\_\_\_ % of the whole figure is **not** shaded.



\_\_\_\_\_ % of the whole figure is shaded.

\_\_\_\_\_ % of the whole figure is **not** shaded.

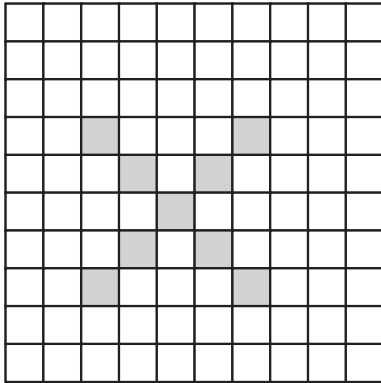


\_\_\_\_\_ % of the whole figure is shaded.

\_\_\_\_\_ % of the whole figure is **not** shaded.

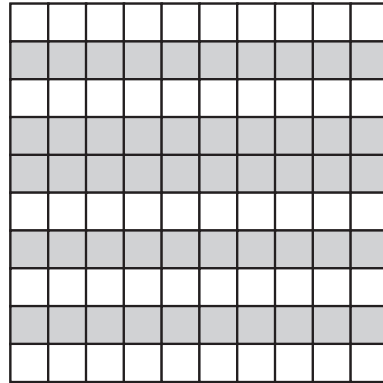
What percentage of each figure is colored?

4 a



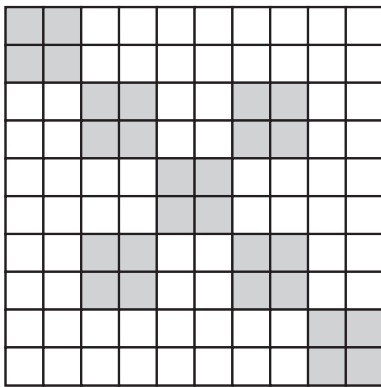
\_\_\_\_\_ %

b



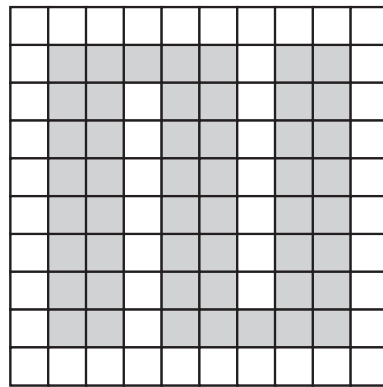
\_\_\_\_\_ %

c



\_\_\_\_\_ %

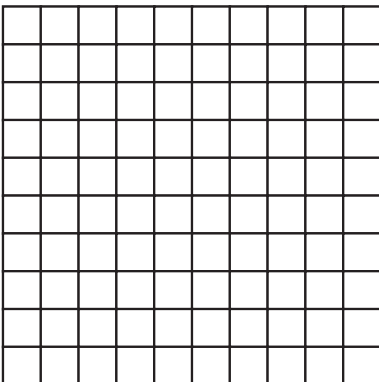
d



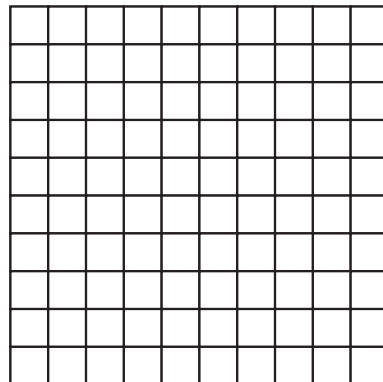
\_\_\_\_\_ %

Answer each question.

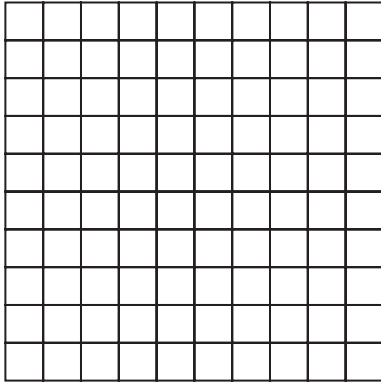
5 Shade 8% of the figure.



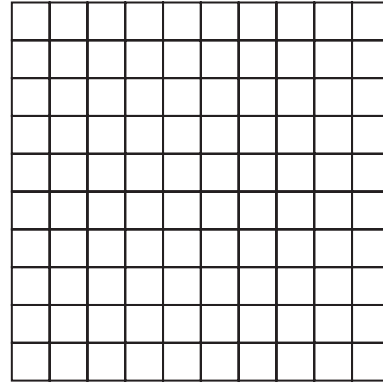
6 Shade 17% of the figure.



7 Shade 50% of the whole figure.



8 Shade 75% of the whole figure.



**Fill in each blank.**

9 43 out of 100 = \_\_\_\_\_%

11 5 out of 100 = \_\_\_\_\_%

13 90 out of 100 = \_\_\_\_\_%

15 21 out of 100 = \_\_\_\_\_%

17 8 out of 100 = \_\_\_\_\_%

19 4 out of 100 = \_\_\_\_\_%

21 35 out of 100 = \_\_\_\_\_%

23 51 out of 100 = \_\_\_\_\_%

25 7 out of 100 = \_\_\_\_\_%

10 \_\_\_\_\_ out of 100 = 1%

12 \_\_\_\_\_ out of 100 = 10%

14 \_\_\_\_\_ out of 100 = 87%

16 \_\_\_\_\_ out of 100 = 2%

18 \_\_\_\_\_ out of 100 = 3%

20 \_\_\_\_\_ out of 100 = 9%

22 \_\_\_\_\_ out of 100 = 70%

24 \_\_\_\_\_ out of 100 = 6%

26 \_\_\_\_\_ out of 100 = 93%

Answer each question.

27

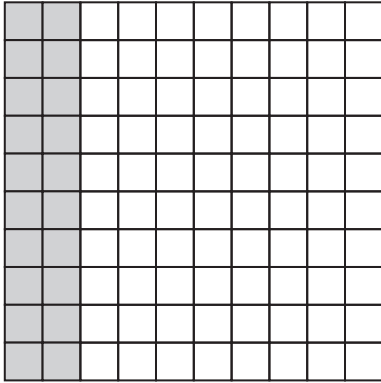


Figure A

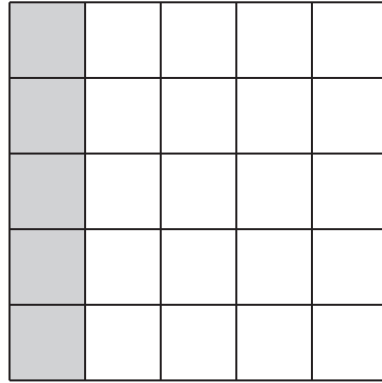


Figure B

Look at the two figures.

Are both figures 20% shaded? \_\_\_\_\_

Explain.

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---

28



Figure X

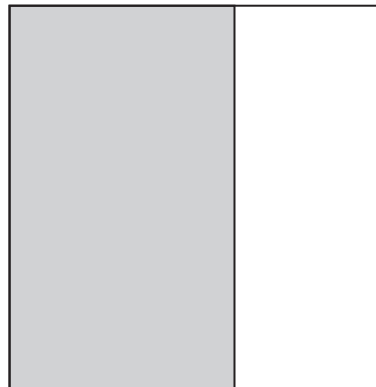
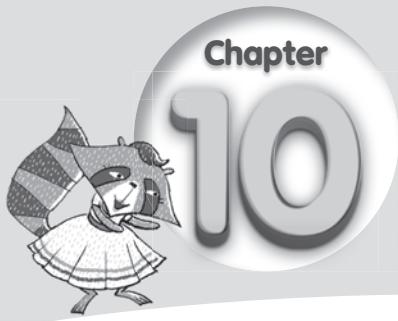


Figure Y

Look at Figures X and Y.

Is the percentage of Figure X that is shaded equal to the percentage of Figure Y that is shaded? \_\_\_\_\_



# Extra Practice and Homework

## Percent

### Activity 2 Fractions, Decimals, and Percent

Express each percent as a fraction in simplest form.

1  $23\% = \frac{\square}{100}$

2  $90\% = \frac{\square}{100}$   
 $= \underline{\hspace{2cm}}$

3  $48\% = \frac{\square}{100}$   
 $= \underline{\hspace{2cm}}$

4  $60\% = \frac{\square}{100}$   
 $= \underline{\hspace{2cm}}$

5 50%

6 82%

7 25%

8 65%

Express each percent as a decimal.

$$\textcircled{9} \quad 45\% = \frac{\boxed{\phantom{00}}}{100}$$
$$= \underline{\hspace{2cm}}$$

$$\textcircled{10} \quad 89\% = \frac{\boxed{\phantom{00}}}{100}$$
$$= \underline{\hspace{2cm}}$$

$$\textcircled{11} \quad 10\% = \frac{\boxed{\phantom{00}}}{100}$$
$$= \underline{\hspace{2cm}}$$

$$\textcircled{12} \quad 3\% = \frac{\boxed{\phantom{00}}}{100}$$
$$= \underline{\hspace{2cm}}$$

$$\textcircled{13} \quad 60\%$$

$$\textcircled{14} \quad 55\%$$

$$\textcircled{15} \quad 1\%$$

$$\textcircled{16} \quad 31\%$$

Express each decimal as a percent.

$$\begin{aligned} 17 \quad 0.28 &= \frac{\boxed{\phantom{00}}}{100} \\ &= \underline{\hspace{2cm}}\% \end{aligned}$$

$$\begin{aligned} 18 \quad 0.64 &= \frac{\boxed{\phantom{00}}}{100} \\ &= \underline{\hspace{2cm}}\% \end{aligned}$$

$$19 \quad 0.3$$

$$20 \quad 0.07$$

Express each fraction as a percent.

$$21 \quad \frac{4}{5}$$

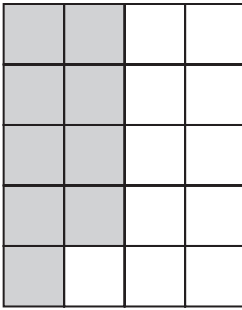
$$22 \quad \frac{19}{25}$$

$$23 \quad \frac{7}{10}$$

$$24 \quad \frac{39}{100}$$

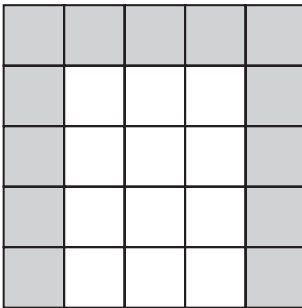
Fill in each table.

25



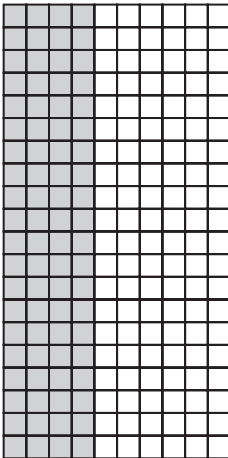
	Fraction	Decimal	Percent
Shaded			
Unshaded			

26



	Fraction	Decimal	Percent
Shaded			
Unshaded			

27



	Fraction	Decimal	Percent
Shaded			
Unshaded			

Answer the question.

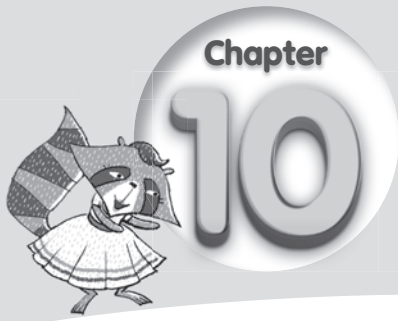
- 28 If we express both  $\frac{4}{10}$  and 0.04 as a percent, would the percents be the same? Explain.

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# Extra Practice and Homework

## Percent

### Activity 3 Percentage of a Quantity

Find each value.

1 15% of 350

2 30% of 760

3 48% of 925

4 55% of 1,420

5 75% of 2,090

6 80% of 3,285

7 32% of 50 kilograms

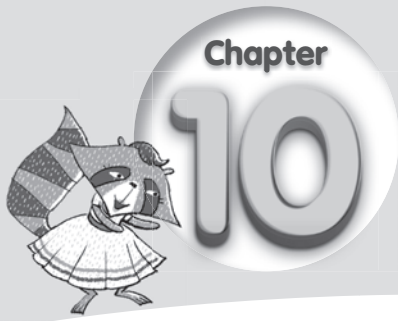
8 35% of 80 liters

9 75% of 16 centimeters

10 40% of 24 kilometers

11 82% of 450 feet

12 60% of 986 grams



# Extra Practice and Homework

## Percent

### Activity 4 Real-World Problems: Percent

Find the amount of discount for each item.

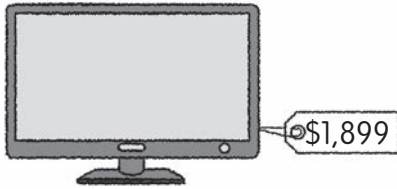


Discount = 15%



Discount = 23%

3



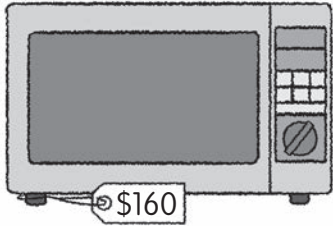
Discount = 30%

Find the amount of sales tax for each item. The prices shown do not include 6% sales tax.

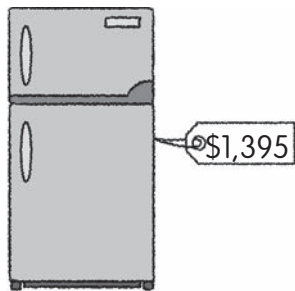
4



5

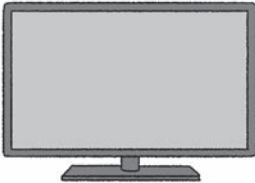
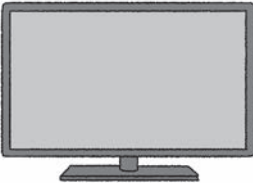


6



**Solve. Show your work.**

- 7 Shop A and Shop B sell the same television screen at different prices and different discounts. Which shop sells the television screen at a cheaper price?

Shop A	Shop B
	
Price: \$1,200 Discount: 20%	Price: \$1,000 Discount: 10%

**8** The usual price of a washing machine was \$259. Mr. Hall bought the washing machine at a discount of \$38.85.

**a** What was the discounted price of the washing machine?

**b** The sales tax was 5% of the discounted price. How much sales tax did Mr. Hall pay? Give your answer correct to the nearest cent.

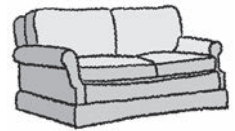
9 Chloe had \$5,000 in her bank account. The bank paid 3% interest at the end of each year. She did not withdraw any of her savings. How much interest did she earn at the end of 1 year?

10 Mr. Clark invested \$12,000 in an investment fund. The bank paid 4% interest at the end of each year. How much interest did he earn at the end of 1 year?



- 11 There were 1,200 books in a library. 35% of the books were fiction books. The rest of the books were non-fiction books. How many non-fiction books were there?

- 12 A sofa costs \$600. What is the price of the sofa after a 15% discount?



- 13 Ms. Lee had \$7,500 in her bank account. The bank paid 4% interest at the end of each year. How much did she have in the bank at the end of 1 year?

- 14 Diego bought a pair of headphones which included a sales tax of 8%. The price of the pair of headphones before the sales tax was \$85. How much did Diego pay for the pair of headphones?



## Chapter 10 Percent

### Activity 1 Percent

- 1  $\frac{36}{64}$  % of the whole figure is shaded.  
 $\frac{64}{64}$  % of the whole figure is **not** shaded.
- 2  $\frac{28}{72}$  % of the whole figure is shaded.  
 $\frac{72}{72}$  % of the whole figure is **not** shaded.
- 3  $\frac{56}{44}$  % of the whole figure is shaded.  
 $\frac{44}{44}$  % of the whole figure is **not** shaded.
- 4
  - a 9
  - b 50
  - c 28
  - d 50
- 5 Accept any answer with 8 shaded parts.
- 6 Accept any answer with 17 shaded parts.
- 7 Accept any answer with 50 shaded parts.
- 8 Accept any answer with 85 shaded parts.
- 9 43
- 10 1

- 11 5
- 12 10
- 13 90
- 14 87
- 15 21
- 16 2
- 17 8
- 18 3
- 19 4
- 20 9
- 21 35
- 22 70
- 23 51
- 24 6
- 25 7
- 26 93
- 27 Yes  
Figure A:  $\frac{20}{100} = 20\%$   
Figure B:  $\frac{5}{25} = \frac{20}{100} = 20\%$
- 28 Yes

### Activity 2 Fractions, Decimals, and Percent

$$1 \quad 23\% = \frac{23}{100}$$

$$2 \quad 90\% = \frac{90}{100} \\ = \frac{9}{10}$$

$$3 \quad 48\% = \frac{48}{100} \\ = \frac{12}{25}$$

$$4 \quad 60\% = \frac{60}{100} \\ = \frac{3}{5}$$

$$\begin{aligned} 5 \quad 50\% &= \frac{50}{100} \\ &= \frac{1}{2} \end{aligned}$$

$$\begin{aligned} 6 \quad 82\% &= \frac{82}{100} \\ &= \frac{41}{50} \end{aligned}$$

$$\begin{aligned} 7 \quad 25\% &= \frac{25}{100} \\ &= \frac{1}{4} \end{aligned}$$

$$\begin{aligned} 8 \quad 65\% &= \frac{65}{100} \\ &= \frac{13}{20} \end{aligned}$$

$$\begin{aligned} 9 \quad 45\% &= \frac{45}{100} \\ &= 0.45 \end{aligned}$$

$$\begin{aligned} 10 \quad 89\% &= \frac{89}{100} \\ &= 0.89 \end{aligned}$$

$$\begin{aligned} 11 \quad 10\% &= \frac{10}{100} \\ &= 0.1 \end{aligned}$$

$$\begin{aligned} 12 \quad 3\% &= \frac{3}{100} \\ &= 0.03 \end{aligned}$$

$$\begin{aligned} 13 \quad 60\% &= \frac{60}{100} \\ &= 0.6 \end{aligned}$$

$$\begin{aligned} 14 \quad 55\% &= \frac{55}{100} \\ &= 0.55 \end{aligned}$$

$$\begin{aligned} 15 \quad 1\% &= \frac{1}{100} \\ &= 0.01 \end{aligned}$$

$$\begin{aligned} 16 \quad 31\% &= \frac{31}{100} \\ &= 0.31 \end{aligned}$$

$$\begin{aligned} 17 \quad 0.28 &= \frac{28}{100} \\ &= 28\% \end{aligned}$$

$$\begin{aligned} 18 \quad 0.64 &= \frac{64}{100} \\ &= 64\% \end{aligned}$$

$$\begin{aligned} 19 \quad 0.3 &= \frac{30}{100} \\ &= 30\% \end{aligned}$$

$$\begin{aligned} 20 \quad 0.07 &= \frac{7}{100} \\ &= 7\% \end{aligned}$$

$$\begin{aligned} 21 \quad \frac{4}{5} &= \frac{4 \times 20}{5 \times 20} \\ &= \frac{80}{100} \\ &= 80\% \end{aligned}$$

$$\begin{aligned} 22 \quad \frac{19}{25} &= \frac{19 \times 4}{25 \times 4} \\ &= \frac{76}{100} \\ &= 76\% \end{aligned}$$

$$\begin{aligned} 23 \quad \frac{7}{10} &= \frac{7 \times 10}{10 \times 10} \\ &= \frac{70}{100} \\ &= 70\% \end{aligned}$$

$$24 \quad \frac{39}{100} = 39\%$$

25

	Fraction	Decimal	Percentage
Shaded	$\frac{8}{20}$	0.45	45%
Unshaded	$\frac{11}{20}$	0.55	55%

26

	Fraction	Decimal	Percentage
Shaded	$\frac{13}{25}$	0.52	52%
Unshaded	$\frac{12}{25}$	0.48	48%

27

	Fraction	Decimal	Percentage
Shaded	$\frac{80}{200}$	0.4	40%
Unshaded	$\frac{120}{200}$	0.6	60%

28

$$\begin{aligned} \text{No} \\ \frac{4}{10} &= 0.4 \\ &= 40\% \\ 0.04 &= \frac{4}{100} \\ &= 4\% \end{aligned}$$

### Activity 3 Percentage of a Quantity

1  $100\% \rightarrow 350$   
 $1\% \rightarrow 350 \div 100$   
 $= 3.5$   
 $15\% \rightarrow 3.5 \times 15$   
 $= 52.5$

2  $100\% \rightarrow 760$   
 $1\% \rightarrow 760 \div 100$   
 $= 7.6$   
 $30\% \rightarrow 7.6 \times 30$   
 $= 228$

3  $100\% \rightarrow 925$   
 $1\% \rightarrow 925 \div 100$   
 $= 9.25$   
 $48\% \rightarrow 9.25 \times 48$   
 $= 444$

4  $100\% \rightarrow 1,420$   
 $1\% \rightarrow 1,420 \div 100$   
 $= 14.2$   
 $55\% \rightarrow 14.2 \times 55$   
 $= 781$

5  $100\% \rightarrow 2,090$   
 $1\% \rightarrow 2,090 \div 100$   
 $= 20.9$   
 $75\% \rightarrow 20.9 \times 75$   
 $= 1,567.5$

6  $100\% \rightarrow 3,285$   
 $1\% \rightarrow 3,285 \div 100$   
 $= 32.85$   
 $80\% \rightarrow 32.85 \times 80$   
 $= 2,628$

7  $100\% \rightarrow 50 \text{ kg}$   
 $1\% \rightarrow 50 \div 100$   
 $= 0.5 \text{ kg}$   
 $32\% \rightarrow 0.5 \times 32$   
 $= 16 \text{ kg}$

8  $100\% \rightarrow 80 \text{ L}$   
 $1\% \rightarrow 80 \div 100$   
 $= 0.8 \text{ L}$   
 $35\% \rightarrow 0.8 \times 35$   
 $= 28 \text{ L}$

9  $100\% \rightarrow 16 \text{ cm}$   
 $1\% \rightarrow 16 \div 100$   
 $= 0.16 \text{ cm}$   
 $75\% \rightarrow 0.16 \times 75$   
 $= 12 \text{ cm}$

10  $100\% \rightarrow 24 \text{ km}$   
 $1\% \rightarrow 24 \div 100$   
 $= 0.24 \text{ km}$   
 $40\% \rightarrow 0.24 \times 40$   
 $= 9.6 \text{ km}$

11  $100\% \rightarrow 450 \text{ ft}$   
 $1\% \rightarrow 450 \div 100$   
 $= 4.5 \text{ ft}$   
 $82\% \rightarrow 4.5 \times 82$   
 $= 369 \text{ ft}$

12  $100\% \rightarrow 986 \text{ g}$   
 $1\% \rightarrow 986 \div 100$   
 $= 9.86 \text{ g}$   
 $60\% \rightarrow 9.86 \times 60$   
 $= 591.6 \text{ g}$

**Activity 4 Real-World Problems: Percent**

1  $100\% \rightarrow \$29$   
 $1\% \rightarrow \$29 \div 100$   
 $= \$0.29$   
 $15\% \rightarrow \$0.29 \times 15$   
 $= \$4.35$

The amount of discount is \$4.35.

2  $100\% \rightarrow \$169$   
 $1\% \rightarrow \$169 \div 100$   
 $= \$1.69$   
 $23\% \rightarrow \$1.69 \times 23$   
 $= \$38.87$

The amount of discount is \$38.87.

3  $100\% \rightarrow \$1,899$   
 $1\% \rightarrow \$1,899 \div 100$   
 $= \$18.99$   
 $30\% \rightarrow \$18.99 \times 30$   
 $= \$569.70$

The amount of discount is \$569.70.

4  $100\% \rightarrow \$45$   
 $1\% \rightarrow \$45 \div 100$   
 $= \$0.45$   
 $6\% \rightarrow \$0.45 \times 6$   
 $= \$2.70$

The amount of sales tax is \$2.70.

5  $100\% \rightarrow \$160$   
 $1\% \rightarrow \$160 \div 100$   
 $= \$1.60$   
 $6\% \rightarrow \$1.60 \times 6$   
 $= \$9.60$

The amount of sales tax is \$9.60.

$$\begin{aligned} 6 \quad 100\% &\rightarrow \$1,395 \\ 1\% &\rightarrow \$1,395 \div 100 \\ &= \$13.95 \\ 6\% &\rightarrow \$13.95 \times 6 \\ &= \$83.70 \end{aligned}$$

The amount of sales tax is \$83.70.

$$\begin{aligned} 7 \quad \text{Selling price at Shop A:} \\ 100\% - 20\% &= 80\% \\ 100\% &\rightarrow \$1,200 \\ 1\% &\rightarrow \$1,200 \div 100 \\ &= \$12 \\ 80\% &\rightarrow \$12 \times 80 \\ &= \$960 \end{aligned}$$

Selling price at Shop B:

$$\begin{aligned} 100\% - 10\% &= 90\% \\ 100\% &\rightarrow \$1,000 \\ 1\% &\rightarrow \$1,000 \div 100 \\ &= \$10 \\ 90\% &\rightarrow \$10 \times 90 \\ &= \$900 \end{aligned}$$

$$\$960 > \$900$$

Shop B sells the television screen at a cheaper price.

$$\begin{aligned} 8 \quad \text{a} \quad \$259 - \$38.85 &= \$220.15 \\ \text{The discounted price of the washing machine} \\ \text{was } \$220.15. \end{aligned}$$

$$\begin{aligned} \text{b} \quad 100\% &\rightarrow \$220.15 \\ 1\% &\rightarrow \$220.15 \div 100 \\ &= \$2.2015 \\ 5\% &\rightarrow \$2.2015 \times 5 \\ &= \$11.0075 \\ &\approx \$11.01 \end{aligned}$$

Mr. Hall paid \$11.01 sales tax.

$$\begin{aligned} 9 \quad 100\% &\rightarrow \$5,000 \\ 1\% &\rightarrow \$5,000 \div 100 \\ &= \$50 \\ 3\% &\rightarrow \$50 \times 3 \\ &= \$150 \end{aligned}$$

She earned \$150 interest at the end of 1 year.

$$\begin{aligned} 10 \quad 100\% &\rightarrow \$12,000 \\ 1\% &\rightarrow \$12,000 \div 100 \\ &= \$120 \\ 4\% &\rightarrow \$120 \times 4 \\ &= \$480 \end{aligned}$$

He earned \$480 interest at the end of 1 year.

$$\begin{aligned} 11 \quad 100\% - 35\% &= 65\% \\ 65\% \text{ of the books were non-fiction books.} \\ \frac{65}{100} \times 1,200 &= 780 \\ \text{There were 780 non-fiction books.} \end{aligned}$$

$$\begin{aligned} 12 \quad 100\% - 15\% &= 85\% \\ \frac{85}{100} \times \$600 &= \$510 \end{aligned}$$

The price of the sofa after a 15% discount is \$510.

$$\begin{aligned} 13 \quad 4\% \text{ of } \$7,500 &= 4\% \times \$7,500 \\ &= \frac{4}{100} \times 7,500 \\ &= \$300 \end{aligned}$$

$$\$7,500 + \$300 = \$7,800$$

She had \$7,800 in the bank at the end of 1 year.

$$\begin{aligned} 14 \quad 8\% \text{ of } \$85 &= 8\% \times \$85 \\ &= \$6.80 \end{aligned}$$

$$\$85 + \$6.80 = \$91.80$$

Diego paid \$91.80 for the pair of headphones.