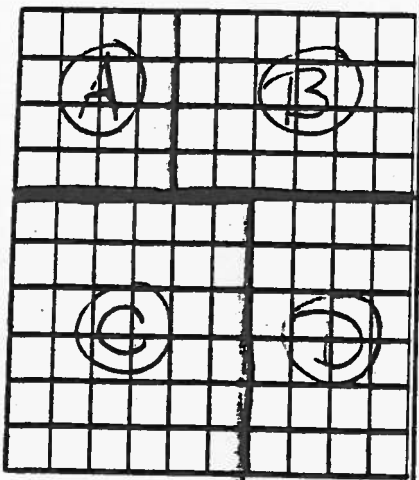


PERCENTAGES

NAME: KEY

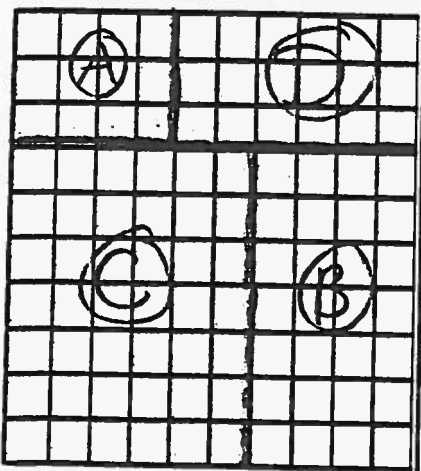
A. Give the area of each piece in this diagram as a percent of the whole square

①



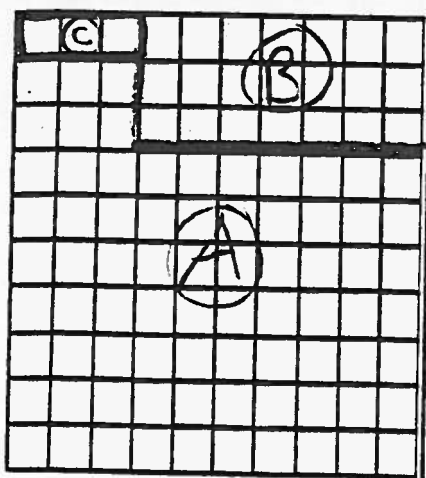
$$\begin{array}{r}
 \text{A) } \underline{16\%} \\
 \text{B) } \underline{24\%} \\
 \text{C) } \underline{36\%} \\
 + \text{D) } \underline{24\%} \\
 \hline
 = 100\%
 \end{array}$$

②



$$\begin{array}{r}
 \text{A) } \underline{12\%} \\
 \text{B) } \underline{28\%} \\
 \text{C) } \underline{42\%} \\
 \text{D) } \underline{18\%} \\
 \hline
 = 100\%
 \end{array}$$

③



$$\begin{array}{r}
 \text{A) } \underline{76\%} \\
 \text{B) } \underline{21\%} \\
 \text{C) } \underline{3\%} \\
 \hline
 = 100\%
 \end{array}$$

B. Benchmarking. Complete the following table

①

100%	80%	60%	15%	5%
70	56	70×0.60 42	70×0.15 10.5	70×0.05 3.5

70×0.80

②

100%	70%	50%	10%	8%
65	65×0.70 45.5	65×0.50 32.5	65×0.10 6.5	65×0.08 5.2

③

100%	60%	40%	15%	2%
40	40×0.60 24	40×0.40 16	40×0.15 6	40×0.02 0.8

④

100%	80%	60%	15%	5%
84	84×0.80 67.2	84×0.60 50.4	84×0.15 12.6	84×0.05 4.2

Complete the table below using your knowledge of fractions, decimal and percent conversions.

Problem	Fraction	Decimal	Percent
1.	$\frac{8}{10} = \frac{4}{5}$	0.80	80%
2.	$\frac{375}{1000} = \frac{3}{8}$	0.375	37.5%
3.	$\frac{55}{100} = \frac{11}{20}$	0.55	55%
4.	$\frac{875}{1000} = \frac{7}{8}$	0.875	87.5%
5.	$\frac{72}{100} = \frac{18}{25}$	0.72	72%
6.	$\frac{65}{100} = \frac{13}{20}$	0.65	65%
7.	$\frac{975}{1000} = \frac{39}{40}$	0.975	97.5%
8.	$1\frac{1}{10}$ or $1\frac{10}{10} = 1\frac{10}{10}$	1.10	110%
9.	$1\frac{5}{100}$ or $1\frac{1}{20}$	1.05	105%
10.	$\frac{46}{10,000} = \frac{23}{5,000}$	0.0046	0.46%
11.	$\frac{13}{100} = 1\frac{3}{25}$	1.12	112%
12.	$1\frac{25}{100} = 1\frac{35}{20}$ $1\frac{3}{4}$	1.75	175%


Check What You Know
SHOW YOUR WORK**Finding Percents**

Solve each problem.

12. A grocery store is offering a 2% savings if customers bag their own groceries. How much will Akira save on a purchase of \$215.50?

He will save \$4.31.

13. A home improvement company gives a 30% discount for all projects over \$1,000. If the original cost of Praveen's project is \$2,545, how much will he save with the discount?

He will save \$763.50.

14. A restaurant charges an automatic 20% tip for groups of 6 or more. A group of 8 people had a bill of \$187. How much was their tip?

Their tip was \$37.40.

15. A department store has a policy of charging a 15% service charge on all returned checks. If a check for \$725 is returned, how much will the service charge be?

The service charge will be \$108.75.

16. A mail order company charges $4\frac{1}{2}\%$ for shipping and handling on all orders. How much is the shipping and handling charge on an order of \$52?

The shipping charge is \$2.34.

17. The phone company charges a 1.5% service fee on all long distance calls. If a long distance bill is \$32, how much is the service fee?

The service fee is \$0.48.

13.

13.

14.

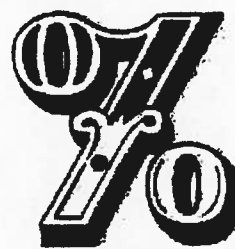
15.

16.

17.

ANSWER KEY

Percentages



Part 1: Convert each percent into a fraction in simplest form.

a. 25% - $\frac{1}{4}$

b. 4% - $\frac{1}{25}$

c. 68% - $\frac{17}{25}$

b. 20% - $\frac{1}{5}$

d. 50% - $\frac{1}{2}$

e. 7% - $\frac{7}{100}$

Part 2: Convert each fraction into a percent.

f. $\frac{2}{5}$ - 40%

g. $\frac{13}{25}$ - 52%

h. $\frac{7}{25}$ - 28%

i. $\frac{19}{100}$ - 19%

j. $\frac{3}{4}$ - 75%

k. $\frac{19}{20}$ - 95%

Part 3: Find the answer to the word problem.

- l. Maria took a history test with 25 questions on it. She correctly answered 22 questions. Write her test score as a percent.

38%



Lesson 4.1 Understanding Percents

Percent means how many out of 100 and is expressed with the symbol %. Percents can also be expressed as fractions with a denominator of 100 and as decimals.

$$25\% = \frac{25}{100} = \frac{1}{4} \text{ or } 0.25 \quad \text{or} \quad 9\% = \frac{9}{100} \text{ or } 0.09$$

$$20\% = 20 \div 100 = 0.20$$

Complete the following. Write fractions in simplest form.

	Percent	Fraction	100 Decimal
1.	7%	$\frac{7}{100}$	0.07
2.	13%	$\frac{13}{100}$	0.13
3.	48%	$\frac{48}{100}$	0.48
4.	71%	$\frac{71}{100}$	0.71
5.	27%	$\frac{27}{100}$	0.27
6.	2%	$\frac{2}{100}$	0.02
7.	15%	$\frac{15}{100}$	0.15
8.	39%	$\frac{39}{100}$	0.39
9.	10%	$\frac{10}{100}$	0.10
10.	62%	$\frac{62}{100}$	0.62
11.	75%	$\frac{75}{100}$	0.75
12.	97%	$\frac{97}{100}$	0.97
13.	53%	$\frac{53}{100}$	0.53
14.	82%	$\frac{82}{100}$	0.82

A

1. Write each fraction as a percent.

a) $\frac{35}{100} = 0.35$

35%

b) $\frac{12}{20}$

60%

c) $\frac{9}{25}$

36%

d) $\frac{3}{8}$

37.5%

2. Write each decimal as a percent.

a) 0.13

13%

b) 0.85

85%

c) 0.07

7%

d) 0.875

87.5%

3. Write each percent as a fraction

a) 36%

$\frac{36}{100}$

b) 70%

$\frac{70}{100}$

c) 12%

$\frac{12}{100}$

d) 110%

$\frac{110}{100}$

4. Write each percent as a decimal.

a) 31% $\div 100$

0.31

b) 12.5% $\div 100$

0.125

c) 95% $\div 100$

0.95

d) 0.0125% $\div 100$

0.000125

13

1. Write each fraction as a percent.

a) $\frac{96}{100}$

96%

b) $\frac{1}{8}$

12.5%

c) $\frac{6}{25}$

24%

d) $\frac{11}{20}$

55%

2. Write each decimal as a percent.

a) 0.09×100

9%

b) 0.75×100

75%

c) 0.14×100

14%

d) 0.375×100

37.5%

3. Write each percent as a fraction.

a) 36%

$\frac{36}{100}$

b) 70%

$\frac{70}{100}$

c) 12%

$\frac{12}{100}$

d) 110%

$\frac{110}{100}$

4. Write each percent as a decimal.

a) $11\% \div 100$

0.11

b) $87.5\% \div 100$

0.875

c) $45\% \div 100$

0.45

d) $0.0625\% \div 100$

0.000625

©

Complete the table below using your knowledge of fractions, decimal and percent conversions.

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4.	$\frac{875}{1000}$	0.875	87.5%
5.	$\frac{72}{100}$	0.72	72%
6.	$\frac{65}{100}$	0.65	65%
7.	$\frac{975}{1000}$	0.975	97.5%
8.	$1\frac{10}{100}$	1.10	110%
9.	$1\frac{5}{100}$	1.05	105%
10.	$\frac{46}{10000}$	0.0046	0.46%
11.	$1\frac{12}{100}$	1.12	112%
12.	$1\frac{75}{100}$	1.75	175%