

Prerequisite Skills: writing fractions and decimals in hundredths

Lesson Focus: changing percents to fractions and decimals
Possible Score: 28
Time Frame: 5-10 minutes

Lesson 1 Percent

The symbol % (read percent) means $\frac{1}{100}$ or 0.01.

$$3\% = 3 \times \frac{1}{100} \text{ or } 3\% = 3 \times 0.01$$

$$= \frac{3}{100} \text{ or } 3 \div 100$$

$$= 0.03$$

$$17\% = 17 \times \frac{1}{100} \text{ or } 17\% = 17 \times 0.01$$

$$= \frac{17}{100} \text{ or } 17 \div 100$$

$$= 0.17$$

Complete the following.

	<i>Percent</i>	<i>Fraction</i>	<i>Decimal</i>
1.	1%	_____	_____
2.	7%	_____	_____
3.	29%	_____	_____
4.	47%	_____	_____
5.	53%	_____	_____
6.	21%	_____	_____
7.	83%	_____	_____
8.	49%	_____	_____
9.	61%	_____	_____
10.	9%	_____	_____
11.	37%	_____	_____
12.	77%	_____	_____
13.	91%	_____	_____
14.	33%	_____	_____

CHAPTER 1

Lesson 2 Percent and Fractions

Study how a percent is changed to a fraction or mixed numeral in simplest form.

$$\begin{aligned} 75\% &= 75 \times \frac{1}{100} \\ &= \frac{75}{100} \\ &= \frac{3}{4} \end{aligned}$$

$$\begin{aligned} 125\% &= 125 \times \frac{1}{100} \\ &= \frac{125}{100} \\ &= \frac{5}{4} \text{ or } 1\frac{1}{4} \end{aligned}$$

Study how a fraction or mixed numeral is changed to a percent.

$$\begin{aligned} \frac{1}{2} &= \frac{1}{2} \times \frac{50}{50} \\ &= \frac{50}{100} \end{aligned}$$

$$\begin{aligned} &= 50 \times \frac{1}{100} \\ &= \underline{50} \% \end{aligned}$$

$$\begin{aligned} 1\frac{3}{4} &= \frac{7}{4} \times \frac{25}{25} \\ &= \frac{175}{100} \end{aligned}$$

$$\begin{aligned} &= 175 \times \frac{1}{100} \\ &= \underline{175} \% \end{aligned}$$

Change each of the following to a fraction or mixed numeral in simplest form.

*a**b**c*

- | | | |
|----------------|--------------|--------------|
| 1. 25% = _____ | 45% = _____ | 160% = _____ |
| 2. 65% = _____ | 120% = _____ | 24% = _____ |
| 3. 78% = _____ | 55% = _____ | 260% = _____ |
| 4. 70% = _____ | 144% = _____ | 86% = _____ |
| 5. 95% = _____ | 40% = _____ | 180% = _____ |

Change each of the following to a percent.

*a**b**c*

- | | | |
|----------------------------|-------------------------|------------------------|
| 6. $\frac{1}{5}$ = _____ | $\frac{3}{4}$ = _____ | $\frac{1}{20}$ = _____ |
| 7. $2\frac{7}{50}$ = _____ | $\frac{3}{5}$ = _____ | $1\frac{1}{5}$ = _____ |
| 8. $\frac{9}{10}$ = _____ | $\frac{7}{25}$ = _____ | $2\frac{1}{4}$ = _____ |
| 9. $1\frac{3}{5}$ = _____ | $\frac{3}{10}$ = _____ | $\frac{4}{25}$ = _____ |
| 10. $\frac{7}{20}$ = _____ | $\frac{31}{50}$ = _____ | $1\frac{2}{5}$ = _____ |

Number

Correct

LESSON FOLLOW-UP AND ERROR ANALYSIS

- 25–30: Ask students how they can determine whether a percent will change to a fraction or to a mixed numeral (more than 100%).
- 168 20–25: Check to see if students changed fractions to simplest form after they were converted from a percent.
- Less than 20: Discuss that mixed numerals change to percents greater than 100.

Lesson 3 Percent and Decimals

Study how a percent is changed to a decimal.

$$12.5\% = 12.5 \times 0.01 \quad 1.25\% = 1.25 \times 0.01$$

$$= \underline{0.125} \quad = \underline{0.0125}$$

Study how a decimal is changed to a percent.

$$0.7 = 0.70 \quad 0.245 = 24.5 \times 0.01$$

$$= 70 \times 0.01 \quad = \underline{24.5} \%$$

$$= \underline{70\%}$$

Change each of the following to a decimal.

*a**b**c*

- | | | | |
|----|---------------|---------------|---------------|
| 1. | 13.5% = _____ | 37% = _____ | 6.25% = _____ |
| 2. | 6.5% = _____ | 4.75% = _____ | 2.75% = _____ |
| 3. | 7% = _____ | 62.5% = _____ | 8.5% = _____ |
| 4. | 32.5% = _____ | 8.75% = _____ | 9.5% = _____ |
| 5. | 8.25% = _____ | 17.5% = _____ | 3.75% = _____ |
| 6. | 0.75% = _____ | 7.25% = _____ | 1.75% = _____ |

Change each of the following to a percent.

*a**b**c*

- | | | | |
|-----|----------------|----------------|----------------|
| 7. | 0.6 = _____ | 0.52 = _____ | 0.325 = _____ |
| 8. | 0.2475 = _____ | 0.8 = _____ | 0.65 = _____ |
| 9. | 0.145 = _____ | 0.1675 = _____ | 0.5 = _____ |
| 10. | 0.06 = _____ | 0.007 = _____ | 0.0625 = _____ |
| 11. | 0.075 = _____ | 0.0075 = _____ | 0.005 = _____ |
| 12. | 0.9 = _____ | 0.19 = _____ | 0.385 = _____ |



Lesson 3 Problem Solving

Solve each problem.

1. Three fourths of the students in class are girls. 1.
What percent of the students are girls?

_____ of the students are girls.

2. Mr. Beck received 65% of the votes cast. What 2.
fractional part of the votes did he receive?

He received _____ of the votes.

3. Marty made a base hit on 25% of his official times 3.
at bat. What is his batting average? (Note: Batting
averages are usually expressed as thousandths.)

His average is _____.

4. Four fifths of the students are in the gym. What 4.
percent of the students are in the gym?

_____ of the students are in the gym.

5. A farmer has 45% of a field plowed. Write a 5.
fraction to tell how much of the field is plowed.

_____ of the field is plowed.

6. The Cubs won 61.5% of their games last year. How 6.
can this percent be expressed as a decimal?

61.5% can be expressed as _____.

7. A certain player has a batting average of 0.312. 7.
How can this batting average be expressed as a
percent?

This average can be expressed as _____.

8. Seven tenths of the customers at the Caribbean 8.
market come in the morning. What percent of the
customers come in the morning?

_____ of the customers come in the morning.