

## Unit 22 Writing Percentages as Fractions and Decimals

### 1. Writing percentages as fractions

A. Multiply the percentage without its percent sign by  $\frac{1}{100}$ .

B. Examples:

$$3\% \rightarrow 3 \times \frac{1}{100} = \frac{3}{100}$$

$$45\% \rightarrow 45 \times \frac{1}{100} = \frac{45}{100}$$

$$\text{reduce } \frac{45}{100} = \frac{45 \div 5}{100 \div 5} = \frac{9}{20}$$

$$143\% \rightarrow 143 \times \frac{1}{100} = \frac{143}{100} = 1 \frac{43}{100}$$

$$8\frac{1}{2}\% \rightarrow 8\frac{1}{2} \times \frac{1}{100}$$

$$= \frac{17}{2} \times \frac{1}{100} = \frac{17}{200}$$

**Note:** Look at Sections 2 and 3 on page 58. An example on the left has the same percentage as does the example to its right. The same is true for the above examples. Reading these examples from left to right will help you understand the connection among percentages, fractions, and decimals.

### 2. Writing percentages as decimals

A. Multiply the percentage without its percent sign by .01.

B. Examples:

$$3\% \rightarrow 3 \times .01 = .03$$

$$45\% \rightarrow 45 \times .01 = .45$$

$$143\% \rightarrow 143 \times .01 = 1.43$$

$$8\frac{1}{2}\% \rightarrow 8.5 \times .01$$

$$= .085$$

#### Review

From	To	Multiplication Factor
Fraction	%	$\frac{100\%}{1}$
Decimal	%	100%
%	Fraction	$\frac{1}{100}$
%	Decimal	.01

3. A lot can be learned about fractions, decimals, and percentages by arranging a group of numbers in ascending order (low to high) or descending order (high to low).

A. Example: arrange these numbers in ascending order.

60%    140%    1.0     $\frac{4}{3}$     1%    .1    .001    99.9%    0.0

B. Procedures:

1. Change all numbers to decimals. (refer to Unit 17 for help)

.6    1.4    1.0     $1.\bar{3}$     .01    .10    .001    .999    0.0

2. Put the smallest number on the left (0.0) and the largest (140%) on the right.

3. Find a number near the middle (60%) placing it halfway between 0.0 and 100%.

4. Place the remaining numbers in their approximate position. This is the answer.

0.0    .001    1%    .1    60%    99.9%    1.0     $\frac{4}{3}$     140%