

Section 8.6

TERMINOLOGY

8.6

For the following term, provide 1) a definition in your own words, 2) the formal definition (as provided by your text or instructor), and 3) an example of the term using a drawing or problem. A sample filled-out form is available in the Introduction.

Percent

Your definition	
Formal definition	
Example	

READING AND SELF-DISCOVERY QUESTIONS

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1. What process do you use for converting a decimal number into a percent?

Move the decimal point two places to the right (which is equivalent to multiplying by 100, representing per hundred or percent). The new number is the percent number. Place a % sign next to the percent number.

2. What process do you use when converting a percent into a decimal number?

Move the decimal place two places to the left (this is equivalent to multiplying by 1/100). Remove the % sign and the new number is the decimal equivalent.

CRITICAL THINKING QUESTIONS

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1. Why can something grow by 110% ("...the population increased by 110%..."), but not decrease by 110% ("...the population decreased by 110%...")?

A number can increase by 110% because this is equivalent to adding a little more than the number to the number. However, decreasing by 110% is equivalent to subtracting more than the number from itself. This is not possible in the real world with real things/people.

2. Jordan received a pay cut of 10%. Later, she received a 10% raise. Explain why her pay is now *less* than it originally was.

The pay cut of 10% is against a base of say, X. The cut is $X \cdot 0.1 = 0.1X$. The pay increase is against a base of $0.9X$. The pay raise is $0.9X \cdot 0.1 = 0.09X$. The raise is less than the increase.

DEMONSTRATE YOUR UNDERSTANDING**8.6**

1. If you have used $\frac{875}{1000}$ of your e-mail mailbox capacity, what percent do you have left?

$$\frac{875}{1000} = 0.875 = 87.5\%$$

$$100\% - 87.5\% = 12.5\%$$

2. You spent twenty dollars on food at a restaurant and left a tip of 18%.

- a) What is the dollar amount of the tip?

$$\$20 \times 18\% = \$20 \times 0.18 = \$3.60$$

- b) How much was the total bill?

$$\$20 + \$3.60 = \$23.60$$

IDENTIFY AND CORRECT THE ERRORS**8.6**

In the second column, identify the error(s) you find in each of the following worked solutions. Describe the error made in the second column. Solve the problem correctly in the third column.

Problem	Describe Error	Correct Process
1. Convert to a percent: 0.0179	The student moved the decimal point too far to the right.	$0.0179 = 1.79\%$
Worked Solution (What is wrong here?)		
$\begin{array}{ccc} 0.0179 & & 17.9\% \\ \hline & & \end{array}$		
Problem	Describe Error	Correct Process
2. Convert to a percent: 18.4	The student replaced 1 with 100 and added the % sign rather than moving the decimal point two places to the right.	$18.4 = 1840\%$
Worked Solution (What is wrong here?)		
$\begin{array}{ccc} 18.4 & & 100.84\% \\ \hline & & \end{array}$		