Bellringer: pg. 6

Write an equation to solve these percent problems.

1) What number is 36% of 120?

\[
\frac{x}{120} \times \frac{36}{100} = 43.2
\]

2) 540 is 18% of what number?

\[
\frac{540}{x} \times \frac{18}{100} = 3000
\]

3) Your school holds classes from 8:00 am to 3:00 pm. For what percent of the 24-hour day does your school hold classes?

\[
\frac{7}{24} \times 100 = 29.16\%
\]
<p>| | | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>B</td>
<td>6.</td>
<td>D</td>
<td>(\frac{8090 - 1034}{4})</td>
<td>C</td>
</tr>
<tr>
<td>2.</td>
<td>D</td>
<td>7.</td>
<td>B</td>
<td>\frac{-2204}{4}</td>
<td>12.</td>
</tr>
<tr>
<td>5.</td>
<td>B</td>
<td>10.</td>
<td>A</td>
<td>1756</td>
<td>325</td>
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</tbody>
</table>
Unit 3
Chapter 5 Section 4
Applications of Percent

Objective: To find and estimate solutions to application problems involving percent and to use different ways to represent a situation.

You use percents to calculate taxes, tips, commission fees and percent error.

Sales Tax: a percent of a purchase price
\[ \text{sales tax} = \text{decimal tax rate} \times \text{purchase price} \]
\[ \text{OR } \frac{\text{sales tax}}{\text{price}} = \frac{\text{tax rate}}{100} \]

Tip: a percent of a bill
\[ \text{tip} = \text{decimal tip rate} \times \text{purchase price} \]
\[ \text{OR } \frac{\text{tip}}{\text{bill}} = \frac{\text{tip rate}}{100} \]

Commission: a percent of the amount of sales
\[ \text{commission} = \text{decimal commission rate} \times \text{sales} \]
\[ \text{OR } \frac{\text{commission}}{\text{sales}} = \frac{\text{commission rate}}{100} \]

Percent Error: used to assure that products meet specifications
\[ \text{Percent Error} = \left| \frac{\text{Actual Value} - \text{Measured Value}}{\text{Actual Value}} \right| \times 100 \]
Examples:

Finding Sales Tax

1) Mrs. Majewski goes to Babies R Us and her total bill comes to be $55.50. There is a 6% sales tax at the store. How much tax will she pay on her baby purchases? How much total will she pay?

\[
\text{tax} = \frac{\text{price}}{100} \\
\frac{x}{55.50} = \frac{6}{100} \\
x = 3.33 \\
\text{She pays 3.33 in tax.}
\]

Total: $55.50 + 3.33 = $58.83
The total is $58.83

2) Alyssa goes to the Montgomery Mall and spends $139.00. She paid 7% sales tax on her total purchases. How much money total did Alyssa spend at her shopping spree at the Mall?

\[
\frac{x}{139} = \frac{7}{100} \\
9.73 = 100x \\
x = 9.73 \\
\text{total} = 9.73 + 139
\]

$148.73

Estimating a Tip

3) You and your friends go to Friendly’s. The total bill comes to $45.90. You want to leave a 20% tip. How much tip should you leave?

\[
\frac{x}{45.90} = \frac{20}{100} \\
9.18 = 100x \\
x = 9.18
\]

They should leave $9.18

4) Kris and Emma go to Chipotle for lunch. The meal comes to $25.50. They leave an 15% tip. What is the total bill that Kris and Emma must pay?

\[
\frac{x}{2550} = \frac{15}{100} \\
x = 3.825 \\
2550 + 3.83 = 2553.83 \\
\text{The total is 2933.83}
\]

Finding a Commission

5) Find the commission on a $500 sale with a commission rate of 12.5%.

\[
\frac{x}{500} = \frac{12.5}{100} \\
x = \frac{62.5}{100}
\]

6) A sales agent earns a weekly salary of $650, plus a commission of 4% on all sales. His sales this week are $1,250. How much does he earn?

\[
\frac{x}{1250} = \frac{4}{100} \\
x = \frac{50.00}{100}
\]