5.3 Rates

**EQ:** How can you use rates to describe changes in real-life problems?

**Rate:** a ratio with different units

**Unit Rate:** a rate that compares to ONE of EX: 40 miles per 1 hour something.

**Equivalent Rates:** rates that have the same unit rate: (equal) EX: 30 mi per 1 hr = 60 mi per 2 hrs

**Example 1:** Write a rate that represents the situation.

<table>
<thead>
<tr>
<th>words</th>
<th>0</th>
<th>15</th>
<th>30</th>
<th>45</th>
<th>60</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>minutes</td>
<td>0</td>
<td>10</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
</tr>
</tbody>
</table>

75 words per 50 minutes

**Example 2:** Find the unit rate. You save $28 in 4 weeks. What is the unit rate of your savings?

\[
\begin{array}{c|c|c|c|c|c|c|c|c}
\text{wks} & 4 & 2 & 1 & 3 & 28 \\
\hline
\text{wks} & 4 & 2 & 1 & 3 & 28 \\
\hline
\end{array}
\]

\[ \frac{28}{4} = \frac{7}{1} = \frac{28}{4} = \frac{7}{1} \text{ per 1 week} \]

**Example 3:** Find the unit rate

\[ \frac{\text{in}}{\text{yr}} \]

\[ \frac{\frac{7}{4}}{12} = \frac{\frac{1}{3}}{1} \]

\[ \frac{1}{3} \text{ in per 1 yr} \]