Section 6.7 – Word Problems Continued

II. Rate of Work

If it takes 3 hours to paint a room, what fraction of the room is painted after:

1 hour?

2 hours?

3 hours?

Rate of Work = fraction of a job completed after 1 hour

\[
\frac{1}{\text{Total # of Hours to Complete a Job}}
\]

What is the Rate of Work for the example above?

**Formula:**

\[(\text{Rate of Work}) \times (\text{# of Hours Worked}) = \text{Portion of Job Completed}\]

Ex. 1 – Al and Joe own a small roofing company. Joe can roof a house alone in 9 hours, whereas Al can roof a house alone in 8 hours. How long will it take them to do the job if they work together?

Let x = # of hours Al and Joe work together

Set up a table to help organize the information:

<table>
<thead>
<tr>
<th>Rate of Work</th>
<th># of Hours Worked</th>
<th>Portion of Job Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Joe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ex. 2 – Larry and Moe mow the grass at a country club. Working alone, it takes Larry 7 hours to cut the grass. It takes Moe 5 hours to cut the grass if he works alone. How long will it take them to cut the grass if they work together?