1. **Reaction of Aspirin and Water:**
Aspirin $C_9H_8O_4$ reacts with water to give salicylic acid $C_7H_6O_3$ and acetic acid.

Salicylic acid is the actual substance that relieves pain and reduces fever and inflammation.

**a.** When is Aspirin most likely to be prescribed?
________________________________________________________________________

**b.** Write the equation of the reaction between Aspirin and water:

- **Word equation:**
_______________________________________________________________________

- **Molecular formula:** (Challenge)
_______________________________________________________________________

The adjacent graph shows the concentrations (amount) of aspirin and salicylic acid as a function of time. Curve 1 and curve 2 are plotted.

**c.** Which curve shows the amount of Aspirin and that of Salicylic acid? Justify your answer.

Curve 1: __________________________
________________________________________________________________________

Curve 2: __________________________
________________________________________________________________________

**d.** Does this reaction finish at 30 sec? Justify your answer.
___________________________________________________________________________
___________________________________________________________________________
e. The following table shows the number of molecules of the substances used above.

<table>
<thead>
<tr>
<th>Time in sec</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of molecules of Aspirin</td>
<td>50</td>
<td>40</td>
<td>25</td>
<td>10</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Number of molecules of Salicylic acid</td>
<td>0</td>
<td>10</td>
<td>25</td>
<td>40</td>
<td>45</td>
<td>47</td>
<td>49</td>
<td>50</td>
</tr>
</tbody>
</table>