1. Consider the diagram below which shows a function as a sort of machine.

   ![Function Machine Diagram](image)

   \[
   f(x) = 2x^2 - 3
   \]

   a) Explain what happens when a number is put into the function machine.

   b) Complete the following table of values

<table>
<thead>
<tr>
<th>x</th>
<th>-3</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>f(x)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   c) Draw a sketch of the function

2. Let \( f(x) = x + 3 \) and \( g(x) = x^2 \)

   Explain what is meant by \( f(g(x)) \) and \( g(f(x)) \). You may use examples to help you.

   By substituting various values for \( x \), show that \( f(g(x)) \) does not equal \( g(f(x)) \)