Introduction to Exponential Functions

November 30, 2009

1. Let \( f(x) = 2^x \). Fill in the following table:

\[
\begin{array}{cccccccc}
  x & -3 & -2 & -1 & 0 & 1 & 2 & 3 \\
  f(x) & & & & & & & \\
\end{array}
\]

2. Let \( g(x) = 4^x \). Fill in the following table:

\[
\begin{array}{cccccccc}
  x & -3 & -2 & -1 & 0 & 1 & 2 & 3 \\
  g(x) & & & & & & & \\
\end{array}
\]

3. Sketch the graph of \( y = f(x) \) and \( y = g(x) \) on a common set of axes (please draw your own axes).
4. Let \( h(x) = \left( \frac{1}{2} \right)^x \). Fill in the following table:

<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>( h(x) )</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Sketch a graph of \( y = h(x) \). Please draw your own axes.