Chapter 1

Functions and Change

1.1 Functions

Example 1. Let \( f(x) \) be defined by the table of numbers below.

<table>
<thead>
<tr>
<th>( x )</th>
<th>1</th>
<th>2</th>
<th>2.5</th>
<th>2.9</th>
<th>3.1</th>
<th>3.5</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>( f(x) )</td>
<td>2</td>
<td>3</td>
<td>3.1</td>
<td>4</td>
<td>1</td>
<td>2.9</td>
<td>3</td>
</tr>
</tbody>
</table>

(a) Find \( f(1) \). Find \( f(4) \).
(b) Is it possible to find \( f(1.5) \)?
(c) Solve \( f(x) = 1 \). Solve \( f(x) = 3 \).
Example 2. Let $f(x)$ be the function defined by the graph below

(a) Find $f(0)$, $f(1)$, $f(1.5)$, $f(2)$.

(b) Solve $f(x) = 0$; solve $f(x) = 1$ (find all solutions)
Example 3. Let $f(x) = 3x - 7$.
(a) Find $f(1)$. Find $f(2)$.
(b) Solve $f(x) = 1$; solve $f(x) = 2$ (find all solutions).
Example 4. Let $f(x) = -2x + 5$.
(a) Find $f(3)$.
(b) Solve $f(x) = 3$. 