Functions in Mathematics

**Introduction**

According to Van Der Ven (110), a function in mathematics refers to a law governing a given relationship existing between one variable (the independent variable) and another (the dependent variable). This means that the relationship between a given input set and the possible outcomes or outputs is expressed, and that one input is related to a single output. Conventionally, the letter x represents inputs in a given relation, and the letter y normally represents the output. A function is expressed as $y = f(x)$.

A good example of a function is one that is linear, such as $y = 3x$, represented below;

For example, when $x = 2$, $y = 3*2$, $y = 6$.

<table>
<thead>
<tr>
<th>X</th>
<th>y</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>5</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 1: $y = 3x$ values
From the graph above, we can see that the function is linear from the straight line of the plot.

The code used is presented below:

\[ x = 1:1:5; \]  
\[ y = 3 \times x; \]  
\[ \text{plot}(x,y); \]  
\[ \text{title('y Vs. x');} \]  
\[ \text{xlabel('x');} \]  
\[ \text{ylabel('y');} \]

**Application in Real Life Situations**

Functions are important in real-life situations. For example, a worker's wages in a factory can be calculated using a function (Markovits et al. 26). Since the wages \( y \) depend on the number of hours worked \( x \) and the hourly rate of, let's say, $50 per hour, the relation can be given as follows:  
\[ y = 50x \]
For a worker who has done 6 hours, the wages will be:

\[ y = 50 \times 6 \]

\[ y = $300 \]
Works Cited
