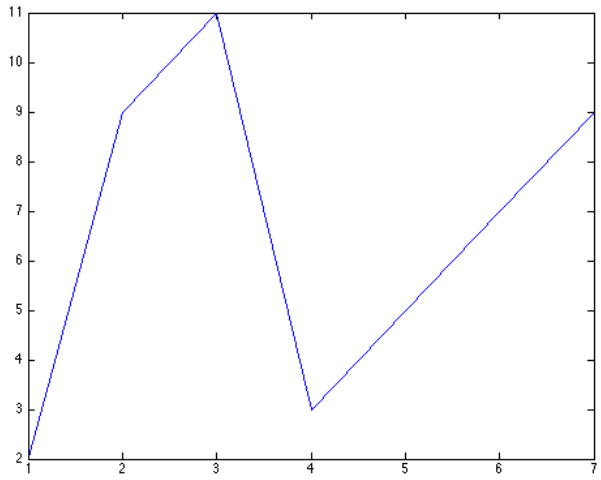
MATLAB Hints

Plots: Labels, Titles, and Axis Control

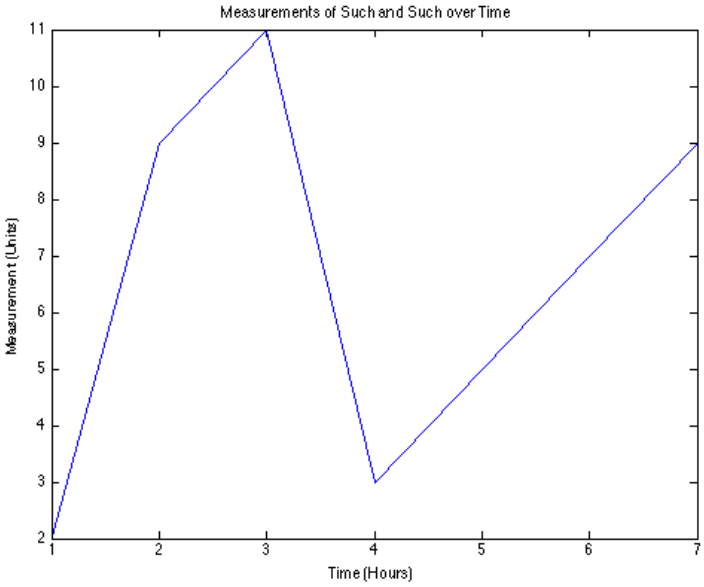
Suppose you want to plot the 7 observations in variable y at the times listed in x as a line graph. You could use the following code:

```
>> x=1:7;
>> y=[2 9 11 3 5 7 9];
>> plot(x,y)
```



If you would like to label the axes and provide a title to make the graph more informative, you can use the following code:

```
>> plot(x,y)
>> title('Measurements of Such and Such over Time')
>> xlabel('Time (Hours)')
>> ylabel('Measurement (Units)')
```



Notice that MATLAB chose the limits for the axes so as to just capture the entire domain and range of the graph. While this can be useful for trying to keep details of graphs as visible as possible, it can sometimes be limiting. If you would like to force MATLAB to use a specified set of axes, you can use the command:

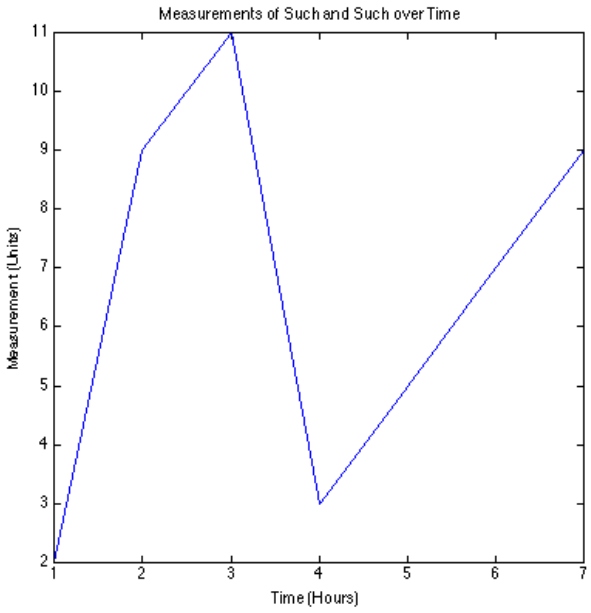
```
>> axis([xmin xmax ymin ymax])
```

As an example, if you want the graph to start at the origin and go up to 15 in both directions, you could use the following:

```
>> plot(x,y)
>> title('Measurements of Such and Such over Time')
>> xlabel('Time (Hours)')
>> ylabel('Measurement (Units)')
>> axis([0 15 0 15])
```

Alternatively, you may not want to specify the limits yourself, but may want to either make the graph square or make the spacing between tick marks equal. In the first case, use:

```
>> plot(x,y)
>> title('Measurements of Such and Such over Time')
>> xlabel('Time (Hours)')
>> ylabel('Measurement (Units)')
>> axis square
```



To force the tick marks on both axes to be the spaced the same way:

```
>> plot(x,y)
>> title('Measurements of Such and Such over Time')
>> xlabel('Time (Hours)')
>> ylabel('Measurement (Units)')
>> axis equal
```