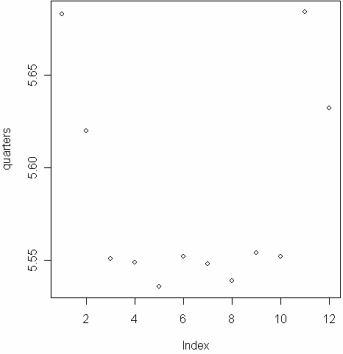
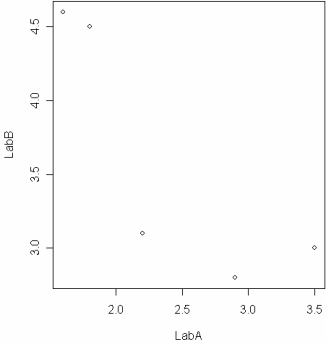
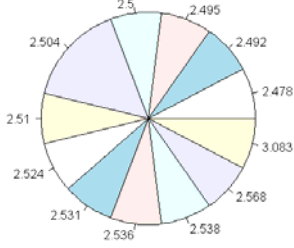
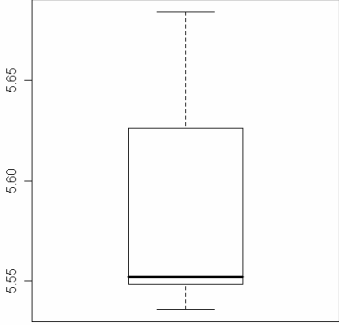
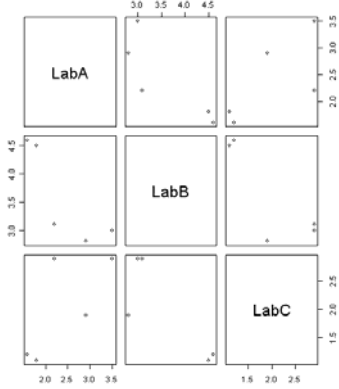
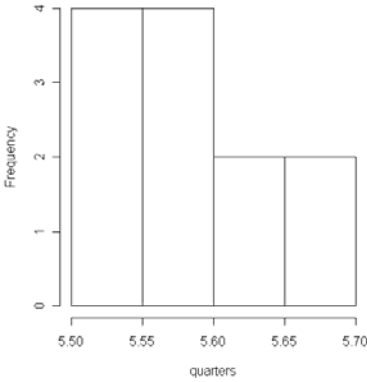
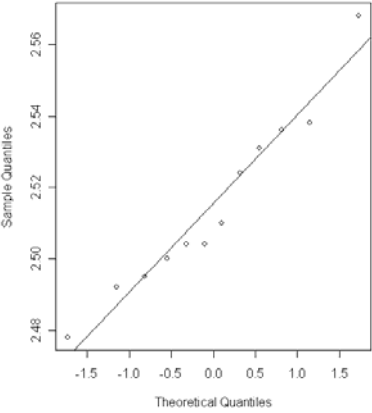
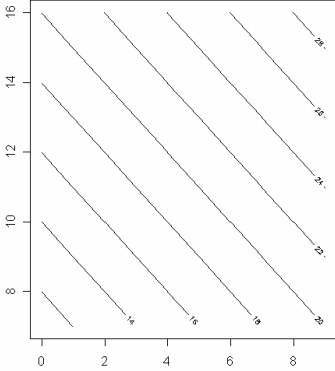


## Graphing Data in R – A Gallery of Plots

The objects used to create these examples are in the file “GraphData.RData”.

Command	Comment	Example
<b>plot(X)</b>	Creates a plot in which the value of each of object X's element is plotted on the y-axis vs. the element's index on the x-axis.	<pre data-bbox="1079 394 1284 426">&gt; plot(quarters)</pre> 
<b>plot(X, Y)</b>	Creates a scatterplot in which the value of each of object yYs elements is plotted on the y-axis vs. the value of the corresponding element for object X on the x-axis. Note – objects X and Y must contain the same number of elements.	<pre data-bbox="1052 846 1312 877">&gt; plot(LabA, LabB)</pre> 
<b>pie(X)</b>	Creates a pie-chart in which each slice represents a unique value from object X's elements and the size of the slice shows the relative frequency of each unique value	<pre data-bbox="1008 1287 1360 1356">&gt; pentable = table(pennies) &gt; pie(pentable)</pre> 

<p><b>boxplot(X)</b></p>	<p>Creates a box-and-whisker plot using object X's values</p>	<p>&gt; boxplot(quarters)</p>  <p>A boxplot showing the distribution of 'quarters'. The y-axis has labels at 5.55, 5.60, and 5.65. The box extends from approximately 5.55 to 5.62, with a median line at 5.55. Whiskers extend from 5.54 to 5.66.</p>
<p><b>pairs(X)</b></p>	<p>Creates a matrix showing all possible scatterplots of the columns in object X. Note – X must be a matrix or data frame.</p>	<p>&gt; pairs(Labs)</p>  <p>A 3x3 pairs plot for 'Labs'. The diagonal cells are labeled 'LabA', 'LabB', and 'LabC'. The off-diagonal cells show scatterplots of pairs of variables. The top row has x-axis labels 3.0, 3.5, 4.0, 4.5. The middle row has y-axis labels 3.0, 3.5, 4.0, 4.5. The bottom row has y-axis labels 1.5, 2.0, 2.5. The bottom row has x-axis labels 2.0, 2.5, 3.0, 3.5.</p>
<p><b>hist(X)</b></p>	<p>Creates a histogram showing the frequency of the elements in object X on the y-axis vs. ranges of values on the x-axis.</p>	<p>&gt; hist(quarters)</p> <p>Histogram of quarters</p>  <p>A histogram titled 'Histogram of quarters'. The y-axis is labeled 'Frequency' and ranges from 0 to 4. The x-axis is labeled 'quarters' and ranges from 5.50 to 5.70. There are four bars: the first bar (5.50-5.55) has a frequency of 4; the second bar (5.55-5.60) has a frequency of 4; the third bar (5.60-5.65) has a frequency of 2; and the fourth bar (5.65-5.70) has a frequency of 2.</p>

<p><b>qqnorm(X)</b></p> <p><b>qqline(X)</b></p>	<p>Creates a normal probability chart of object X's elements on the y-axis vs. their associated probability based on a cumulative frequency and assuming a normal distribution. The optional command qqline superimoses the expected linear relationship for normally distributed data</p>	<pre>&gt; qqnorm(pennies[-6]) &gt; qqline(pennies[-6])</pre> <p style="text-align: center;"><b>Normal Q-Q Plot</b></p> 
<p><b>contour(X,Y,Z)</b></p>	<p>Creates a contour plot of the data in matrix Z using the vectors X and Y to provide values for the rows and columns, respectively. The values for the contours are displayed on the contour lines. The vectors X and Y are optional. Using filled.contour(X, Y, Z) creates a contour plot showing values using color.</p>	<pre>&gt; contour (pH, time, yield)</pre> 
<p><b>persp(X,Y,Z)</b></p>	<p>Creates a 3D plot of the data in matrix Z using the vectors X and Y to provide values for the rows and columns, respectively. The optional commands 'theta' and 'phi' rotate the plot left-to-right and up-and-down, respectively</p>	<pre>&gt;persp(pH, time, yield + theta = 30, phi = 0)</pre> 