TI-83 or TI-84 Graphing Calculator  
Linear and Quadratic Regression Lines  
(This technique is especially helpful in Math 1001 and Math 1431)

First, we must turn on Diagnostics on your calculator.  
Note: you only have to do this once (the first time you do this activity).  

2nd Catalog  
Diagnostics ON  
Enter

Problem #1: Given the following information:

<table>
<thead>
<tr>
<th>x</th>
<th>2</th>
<th>5</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>12</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>5</td>
<td>10</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>21</td>
<td>27</td>
</tr>
</tbody>
</table>

Create a scatter plot of the data  
STAT  
Edit  
Enter data for x in L1  
Enter data for y in L2  
2nd Y= (for Stat Plot) / Enter / Enter (to turn ON) / Type: scatter plot  
Zoom 9 (for Zoom Stat)

Create a linear model for the data and graph both scatter plot and line.  
STAT  
CALC  
4 (LinReg (ax+b))  
L1, L2,  
VARS  
Y-VARS  
1 (for function)  
1 (to use y1) (This puts the equation into y1 for you)  
Enter  
Zoom 9

Note: the closer to “1” your r² value is, the better the fit of the line to the data.
TI-83 or TI-84 Graphing Calculator
Linear and Quadratic Regression Lines
(This technique is especially helpful in Math 1001 and Math 1431)

Problem #2: Given the following information:

<table>
<thead>
<tr>
<th>x</th>
<th>-2</th>
<th>-1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>y</td>
<td>15</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>20</td>
<td>35</td>
<td>55</td>
<td>75</td>
<td>176</td>
</tr>
</tbody>
</table>

Clear the previous work from the calculator
Y=
CLEAR (gets rid of the old equation)
STAT
ClrList (#4)
L₁, L₂
Enter (empties out the lists safely)

Create a scatter plot of the data
STAT
Edit
Enter data for x in L₁
Enter data for y in L₂
ZoomStat (Zoom 9)

Create a quadratic model for the data and graph both scatter plot and parabola.
STAT
CALC
5 (QuadReg)
L₁, L₂,
VARS
Y-VARS
1 (for function)
1 (to use y₁)
Enter
Zoom 9