In[12]:=
```
data = Import["~/Desktop/Data1.txt", "Table"]
```

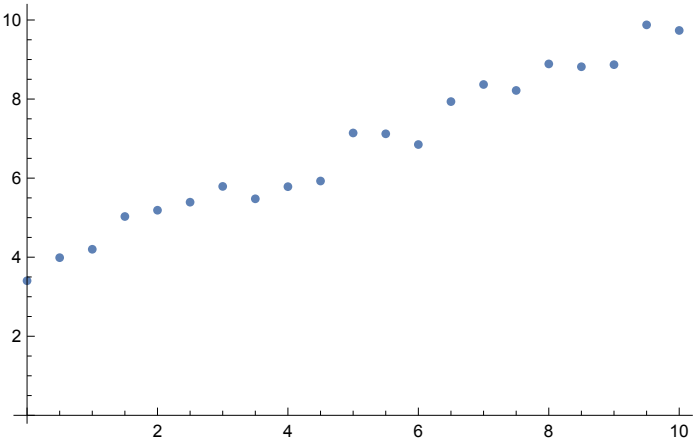
Out[12]=
```
{{X, Y}, {0., 3.4039}, {0.5, 3.9881}, {1., 4.2004}, {1.5, 5.0291}, {2., 5.188},
 {2.5, 5.3914}, {3., 5.7904}, {3.5, 5.4771}, {4., 5.784}, {4.5, 5.9271}, {5., 7.1422},
 {5.5, 7.1213}, {6., 6.8499}, {6.5, 7.936}, {7., 8.3686}, {7.5, 8.2178},
 {8., 8.8891}, {8.5, 8.8176}, {9., 8.8702}, {9.5, 9.8769}, {10., 9.7354}}
```

In[13]:=
```
data = Rest[data]
```

Out[13]=
```
{{0., 3.4039}, {0.5, 3.9881}, {1., 4.2004}, {1.5, 5.0291}, {2., 5.188}, {2.5, 5.3914},
 {3., 5.7904}, {3.5, 5.4771}, {4., 5.784}, {4.5, 5.9271}, {5., 7.1422},
 {5.5, 7.1213}, {6., 6.8499}, {6.5, 7.936}, {7., 8.3686}, {7.5, 8.2178},
 {8., 8.8891}, {8.5, 8.8176}, {9., 8.8702}, {9.5, 9.8769}, {10., 9.7354}}
```

In[26]:=
```
ListPlot[data]
slope = (9.7354 - 3.4039) / (10. - 0.)
yIntercept = 3.4039
Show[ListPlot[data], Plot[(yIntercept + (slope * x)), {x, 0, 10}]]
```

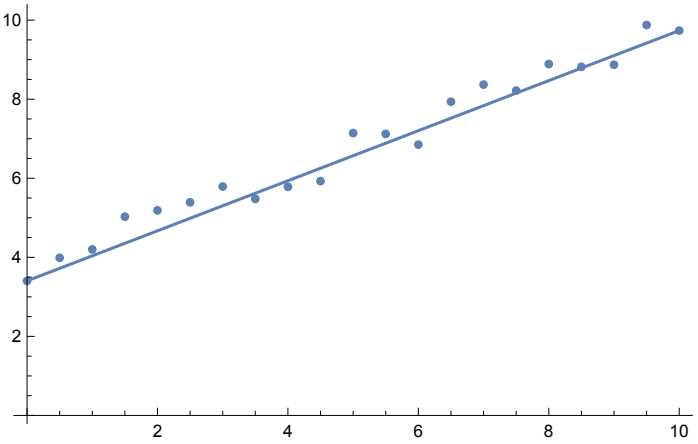
Out[26]=



Out[27]= 0.63315

Out[28]= 3.4039

Out[29]=

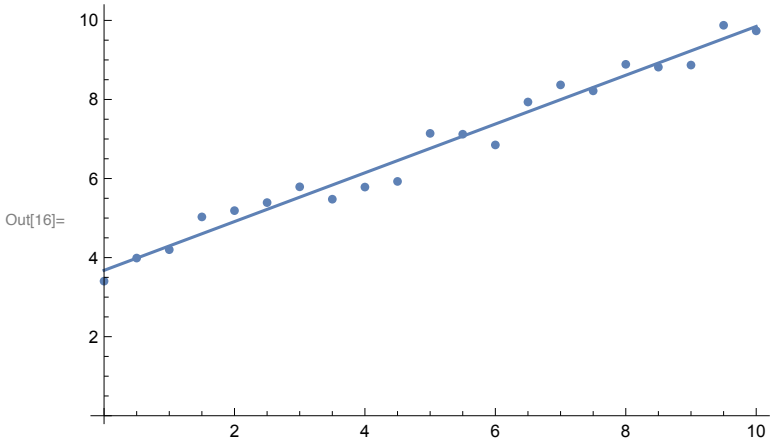


In[15]:=
```
lsq = Fit[data, {1, x}, x]
```

Out[15]= 3.6771 + 0.617003 x

In[16]:=
```
Show[ListPlot[data], Plot[lsq, {x, 0, 10}]]
```

Out[16]=



In[6]:=
```
LorentzData = Import["~/Desktop/LorentzianData.txt", "Table"]
```

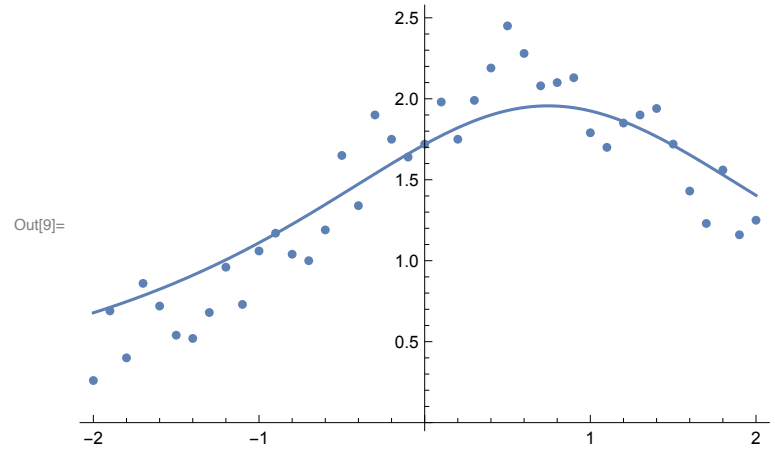
Out[6]=
```
{{-2., 0.26}, {-1.9, 0.69}, {-1.8, 0.4}, {-1.7, 0.86}, {-1.6, 0.72}, {-1.5, 0.54},
 {-1.4, 0.52}, {-1.3, 0.68}, {-1.2, 0.96}, {-1.1, 0.73}, {-1., 1.06},
 {-0.9, 1.17}, {-0.8, 1.04}, {-0.7, 1.}, {-0.6, 1.19}, {-0.5, 1.65}, {-0.4, 1.34},
 {-0.3, 1.9}, {-0.2, 1.75}, {-0.1, 1.64}, {0., 1.72}, {0.1, 1.98}, {0.2, 1.75},
 {0.3, 1.99}, {0.4, 2.19}, {0.5, 2.45}, {0.6, 2.28}, {0.7, 2.08}, {0.8, 2.1},
 {0.9, 2.13}, {1., 1.79}, {1.1, 1.7}, {1.2, 1.85}, {1.3, 1.9}, {1.4, 1.94},
 {1.5, 1.72}, {1.6, 1.43}, {1.7, 1.23}, {1.8, 1.56}, {1.9, 1.16}, {2., 1.25}}
```

In[7]:=
```
Clear[a, c, w]
fit = NonlinearModelFit[LorentzData,
  a / (1 + ((x - c) / 2) ^ 2), {{a, 2.5}, {c, 1}, {w, 1}}, x]
```

Out[8]=
$$\text{FittedModel}\left[\frac{1.95626}{1+\frac{1}{4}(-0.745021+x)^2}\right]$$

In[9]:=
```
Show[ListPlot[LorentzData], Plot[fit[x], {x, -2, 2}]]
```

Out[9]=



In[10]:=
```
fit["ParameterTable"]
```

Out[10]=

	Estimate	Standard Error	t-Statistic	P-Value
a	1.95626	0.0491388	39.8109	1.36266×10^{-32}
c	0.745021	0.0781037	9.53888	1.24697×10^{-11}
w	1.	0.	∞	$0.\times10^{-308}$

In[11]:=
```
fit["BestFit"]
```

Out[11]=
$$\frac{1.95626}{1+\frac{1}{4}\,(-0.745021+x)^2}$$