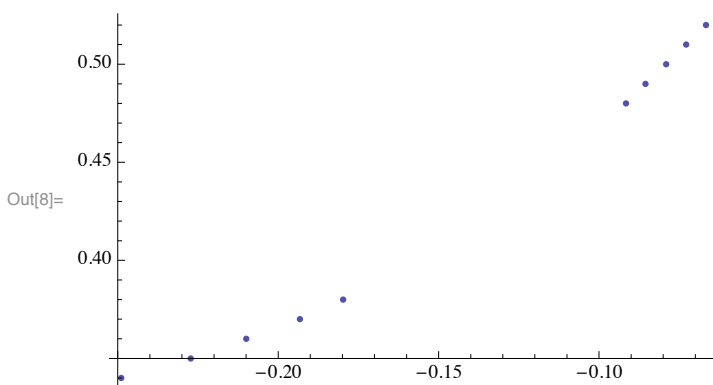# Delta

Tocka1

In[7]:= **tocke1 = {{-0.24894, 0.34}, {-0.227272, 0.35}, {-0.209944, 0.36},
{-0.193242, 0.37}, {-0.179798, 0.38}, {-0.0916223, 0.48}, {-0.085503, 0.49},
{-0.0790764, 0.5}, {-0.0728524, 0.51}, {-0.0666837, 0.52}}**

Out[7]= {{-0.24894, 0.34}, {-0.227272, 0.35}, {-0.209944, 0.36},
{-0.193242, 0.37}, {-0.179798, 0.38}, {-0.0916223, 0.48}, {-0.085503, 0.49},
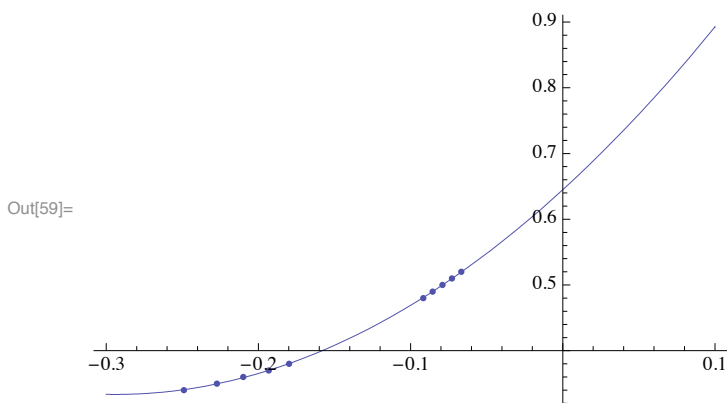{-0.0790764, 0.5}, {-0.0728524, 0.51}, {-0.0666837, 0.52}}

In[8]:= **ListPlot[tocke1]**

Out[8]=

In[9]:= **fit1 = FindFit[tocke1, a * x^2 + b * x + c, {a, b, c}, x]**

Out[9]= {a → 3.60166, b → 2.11787, c → 0.644824}

In[59]:= **s1 = Show[ListPlot[tocke1], Plot[a * x^2 + b * x + c /. fit1, {x, -0.3, 0.1}]]**
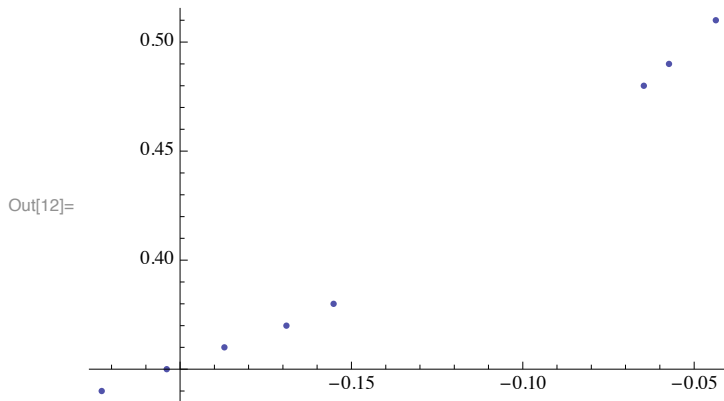
Out[59]=

Tocka2

In[11]:= **tocke2 = {{-0.222873, 0.34}, {-0.203898, 0.35}, {-0.18708, 0.36}, {-0.16895, 0.37},
{-0.155189, 0.38}, {-0.0646842, 0.48}, {-0.0573267, 0.49}, {-0.0436538, 0.51}}**

Out[11]= {{-0.222873, 0.34}, {-0.203898, 0.35}, {-0.18708, 0.36}, {-0.16895, 0.37},
{-0.155189, 0.38}, {-0.0646842, 0.48}, {-0.0573267, 0.49}, {-0.0436538, 0.51}}

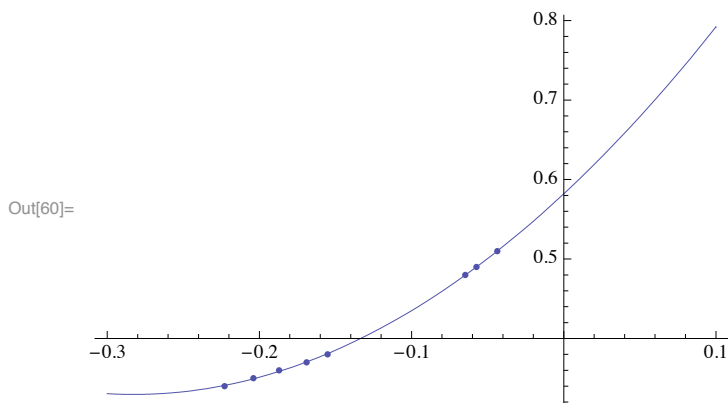In[12]:= **ListPlot[tocke2]**

Out[12]=

In[13]:= **fit2 = FindFit[tocke2, a * x^2 + b * x + c, {a, b, c}, x]**

Out[13]= $\{a \rightarrow 3.15658, b \rightarrow 1.78506, c \rightarrow 0.581984\}$

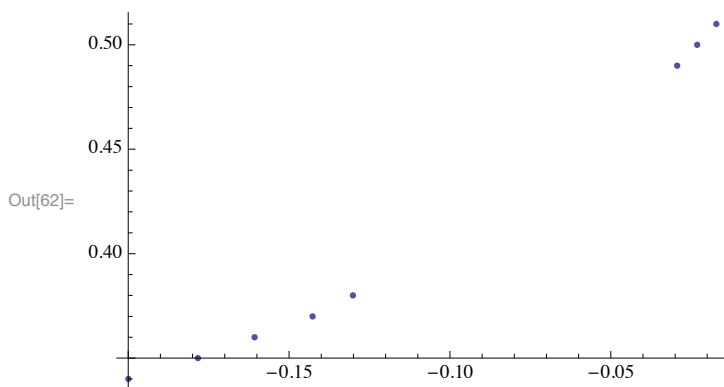In[60]:= **s2 = Show[ListPlot[tocke2], Plot[a * x^2 + b * x + c /. fit2, {x, -0.3, 0.1}]]**

Out[60]=

Tocka3

In[61]:= **tocke3 = {{-0.199962, 0.34}, {-0.178369, 0.35}, {-0.160726, 0.36}, {-0.142697, 0.37},**
{-0.130138, 0.38}, {-.02933, 0.49}, {-0.0231574, 0.5}, {-0.0171627, 0.51}}

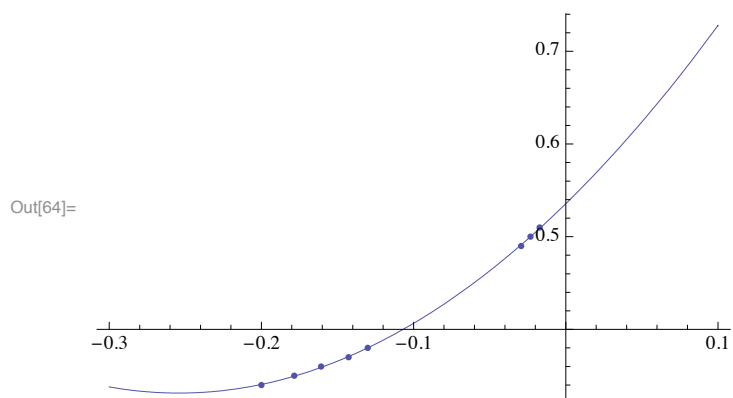Out[61]= $\{\{-0.199962, 0.34\}, \{-0.178369, 0.35\}, \{-0.160726, 0.36\}, \{-0.142697, 0.37\},$
$\{-0.130138, 0.38\}, \{-0.02933, 0.49\}, \{-0.0231574, 0.5\}, \{-0.0171627, 0.51\}\}$

In[62]:= **ListPlot[tocke3]**

Out[62]=

In[63]:= **fit3 = FindFit[tocke3, a * x^2 + b * x + c, {a, b, c}, x]**

Out[63]= {a → 3.15913, b → 1.60638, c → 0.535561}

In[64]:= **s3 = Show[ListPlot[tocke3], Plot[a * x^2 + b * x + c /. fit3, {x, -0.3, 0.1}], PlotRange → All]**
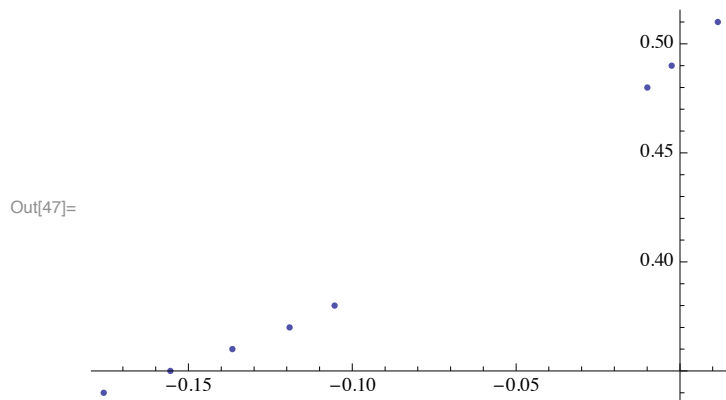
Out[64]=

Tocka4

In[46]:= **tocke4 = {{-0.175867, 0.34}, {-0.155509, 0.35}, {-0.1366, 0.36}, {-0.119141, 0.37}, {-0.10541, 0.38}, {-0.00992469, 0.48}, {-0.00253436, 0.49}, {0.011572, 0.51}}**

Out[46]= {{-0.175867, 0.34}, {-0.155509, 0.35}, {-0.1366, 0.36}, {-0.119141, 0.37}, {-0.10541, 0.38}, {-0.00992469, 0.48}, {-0.00253436, 0.49}, {0.011572, 0.51}}

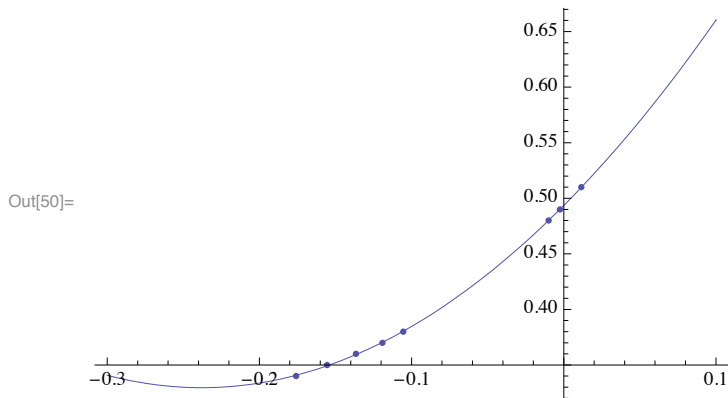In[47]:= **ListPlot[tocke4]**

Out[47]=

In[48]:= **fit4 = FindFit[tocke4, a * x^2 + b * x + c, {a, b, c}, x]**

Out[48]= {a → 2.89722, b → 1.37833, c → 0.493501}

In[50]:= **s4 = Show[ListPlot[tocke4], Plot[a * x^2 + b * x + c /. fit4, {x, -0.3, 0.1}], PlotRange → All]**
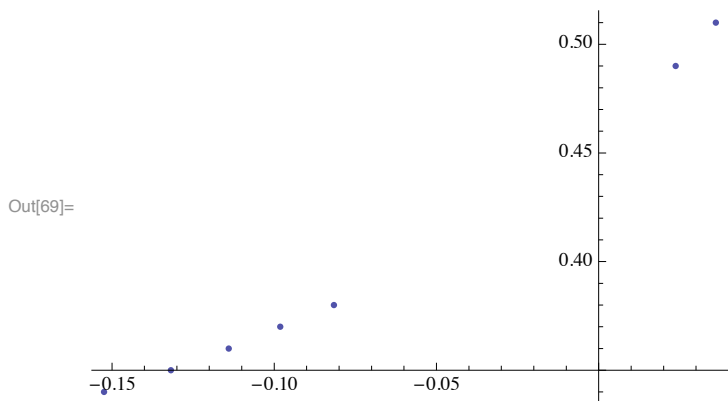
Out[50]=

Tocka5

In[68]:= **tocke5 = {{-0.152423, 0.34}, {-0.131847, 0.35}, {-0.114035, 0.36},**
{-0.0981261, 0.37}, {-0.0815955, 0.38}, {0.0237111, 0.49}, {0.036113, 0.51}}

Out[68]= {{-0.152423, 0.34}, {-0.131847, 0.35}, {-0.114035, 0.36},
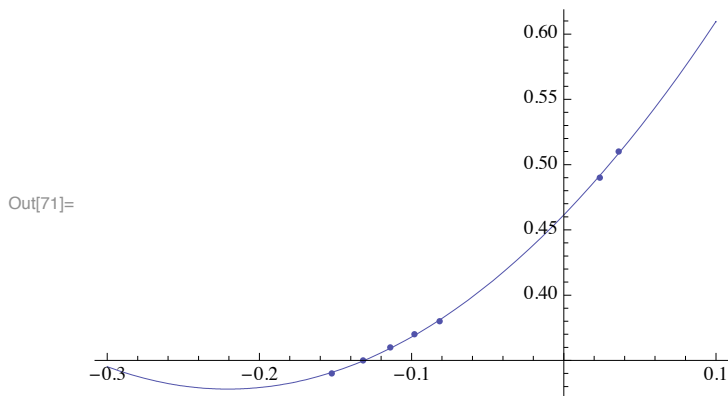{-0.0981261, 0.37}, {-0.0815955, 0.38}, {0.0237111, 0.49}, {0.036113, 0.51}}

In[69]:= **ListPlot[tocke5]**

Out[69]=

In[70]:= **fit5 = FindFit[tocke5, a * x^2 + b * x + c, {a, b, c}, x]**

Out[70]= {a → 2.73749, b → 1.20833, c → 0.461383}

In[71]:= **s5 = Show[ListPlot[tocke5], Plot[a * x^2 + b * x + c /. fit5, {x, -0.3, 0.1}], PlotRange → All]**
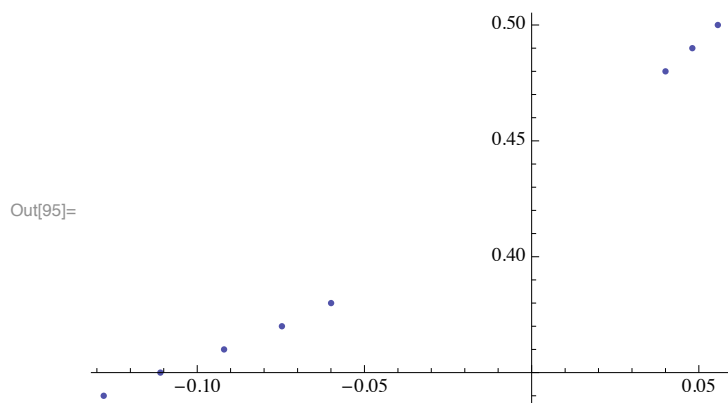
Out[71]=

Tocka6

In[94]:= **tocke6 = {{-0.127956, 0.34}, {-0.111014, 0.35}, {-0.0919486, 0.36}, {-0.0746568, 0.37},**
{-0.0599823, 0.38}, {0.0400255, 0.48}, {0.0480319, 0.49}, {0.0556724, 0.50}}

Out[94]= {{-0.127956, 0.34}, {-0.111014, 0.35}, {-0.0919486, 0.36}, {-0.0746568, 0.37},
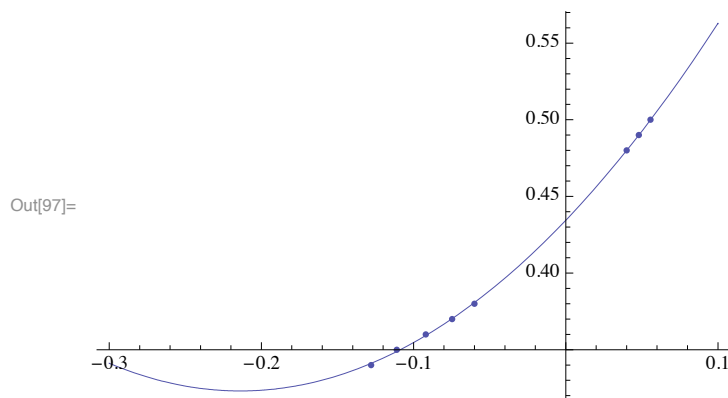{-0.0599823, 0.38}, {0.0400255, 0.48}, {0.0480319, 0.49}, {0.0556724, 0.5}}

In[95]:= **ListPlot[tocke6]**

Out[95]=

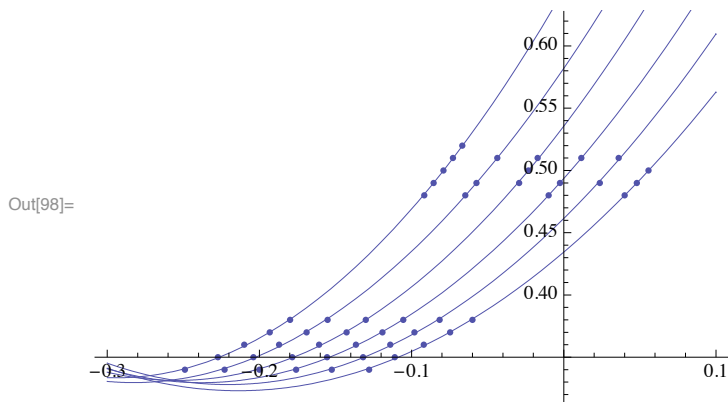In[96]:= **fit6 = FindFit[tocke6, a * x ^ 2 + b * x + c, {a, b, c}, x]**

Out[96]= {a → 2.43462, b → 1.04115, c → 0.434404}

In[97]:= **s6 = Show[ListPlot[tocke6], Plot[a * x ^ 2 + b * x + c /. fit6, {x, -0.3, 0.1}], PlotRange → All]**

Out[97]=

Final Results

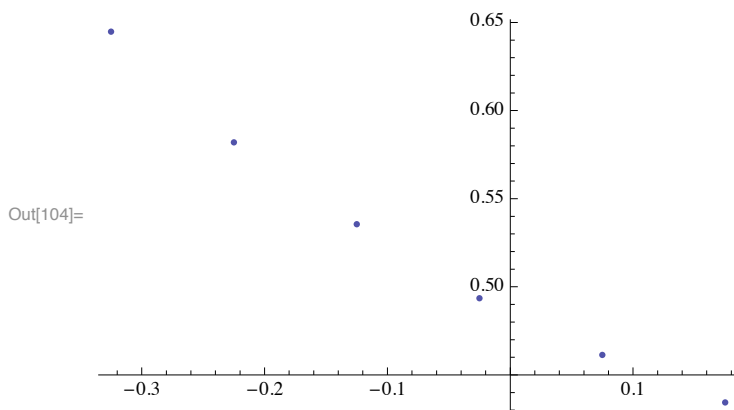In[98]:= `Show[s1, s2, s3, s4, s5, s6]`

Out[98]=

C - Dependence

In[103]:= `tockeC = {{-0.325, c /. fit1}, {-0.225, c /. fit2},`
`    {-0.125, c /. fit3}, {-0.025, c /. fit4}, {0.075, c /. fit5}, {0.175, c /. fit6}}`

Out[103]= `{{-0.325, 0.644824}, {-0.225, 0.581984}, {-0.125, 0.535561},`
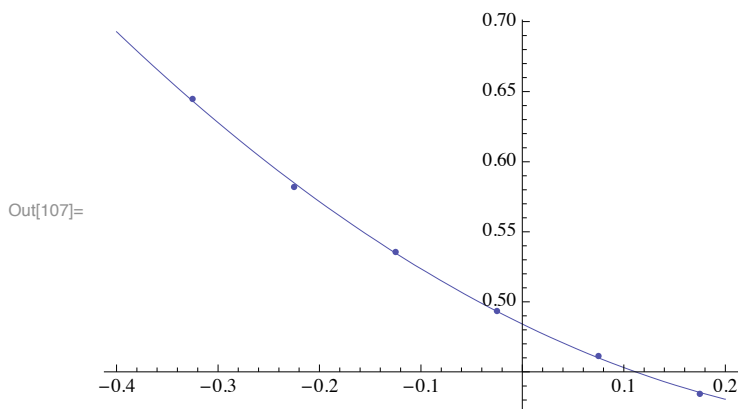`    {-0.025, 0.493501}, {0.075, 0.461383}, {0.175, 0.434404}}`

In[104]:= `ListPlot[tockeC]`

Out[104]=

In[106]:= `fitC = FindFit[tockeC, d * x² + f * x + g, {d, f, g}, x]`

Out[106]= $\{d \rightarrow 0.422362, f \rightarrow -0.352635, g \rightarrow 0.484134\}$

In[107]:= $\text{Show}\big[\text{ListPlot}[\text{tockeC}], \text{Plot}\big[d * x^2 + f * x + g /. \text{fitC}, \{x, -0.4, 0.2\}\big]\big]$

Out[107]=

B - Dependence

In[110]:= $\text{tockeB} = \{\{-0.325, b /. \text{fit1}\}, \{-0.225, b /. \text{fit2}\},$
$\{-0.125, b /. \text{fit3}\}, \{-0.025, b /. \text{fit4}\}, \{0.075, b /. \text{fit5}\}, \{0.175, b /. \text{fit6}\}\}$

Out[110]= $\{\{-0.325, 2.11787\}, \{-0.225, 1.78506\}, \{-0.125, 1.60638\},$
$\{-0.025, 1.37833\}, \{0.075, 1.20833\}, \{0.175, 1.04115\}\}$

In[109]:= $\text{ListPlot}[\text{tockeB}]$

Out[109]=

$\text{fitB} = \text{FindFit}\big[\text{tockeB}, d * x^2 + f * x + g, \{d, f, g\}, x\big]$

Out[116]= $\{d \rightarrow 1.54087, f \rightarrow -1.86654, g \rightarrow 1.32926\}$

In[117]:= $\text{Show}\big[\text{ListPlot}[\text{tockeB}], \text{Plot}\big[d * x^2 + f * x + g /. \text{fitB}, \{x, -0.4, 0.2\}\big]\big]$
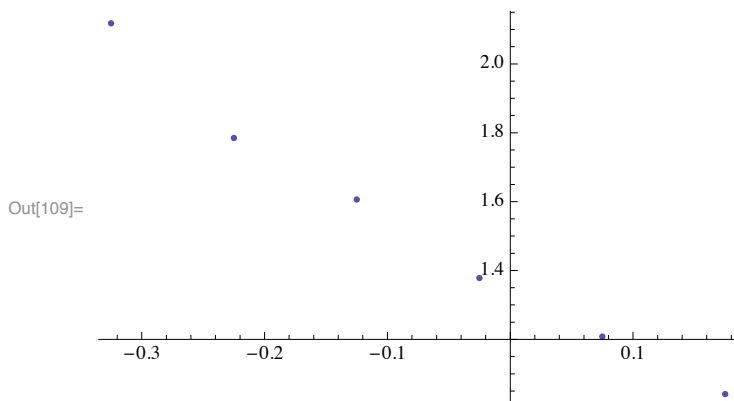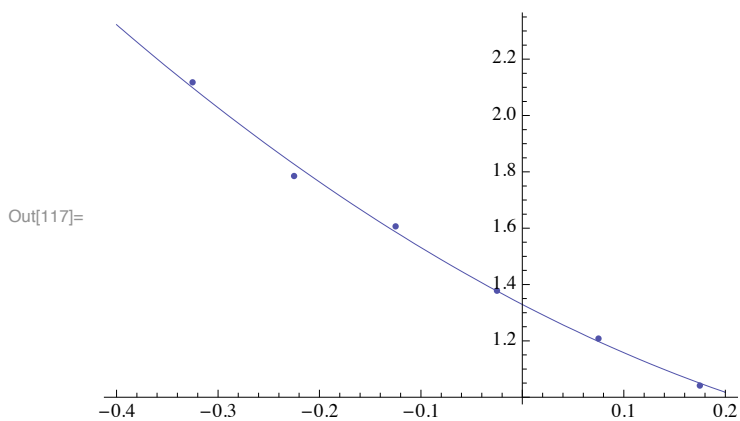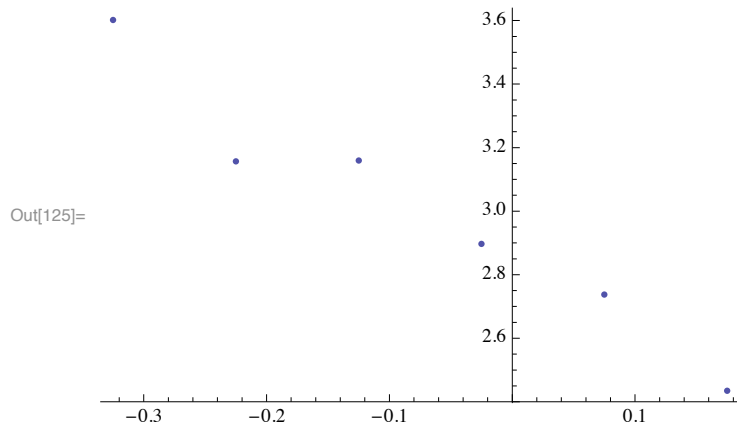
Out[117]=

A - Dependence

In[124]:= **tockeA = {{-0.325, a /. fit1}, {-0.225, a /. fit2},**
{-0.125, a /. fit3}, {-0.025, a /. fit4}, {0.075, a /. fit5}, {0.175, a /. fit6}}

Out[124]= {{-0.325, 3.60166}, {-0.225, 3.15658}, {-0.125, 3.15913},
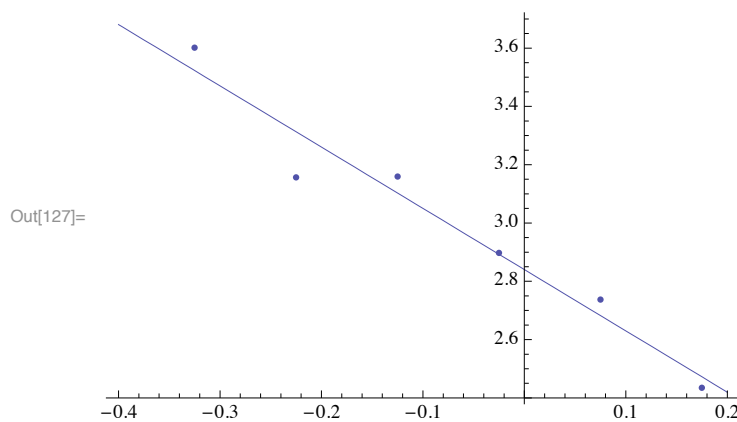{-0.025, 2.89722}, {0.075, 2.73749}, {0.175, 2.43462}}

In[125]:= **ListPlot[tockeA]**

Out[125]=

In[126]:= **fitA = FindFit$\left[$tockeA, $0 * x^2 + f * x + g$, {d, f, g}, x$\right]$**

Out[126]= $\left\{d \rightarrow -1.17698 \times 10^{-15}, f \rightarrow -2.10124, g \rightarrow 2.84019\right\}$

In[127]:= **Show$\left[$ListPlot[tockeA], Plot$\left[$ $d * x^2 + f * x + g$ /. fitA, {x, -0.4, 0.2}$\right]\right]$**

Out[127]=



Theta

Final Results

In[187]:= **tocke = {{-0.525, 0.236597, 0.314079}, {-0.425, 0.201964, 0.351425},**
{-0.325, 0.166556, 0.419333}, {-0.225, 0.11717, 0.437929},
{-0.125, 0.0685948, 0.466456}, {-0.025, 0.0197324, 0.490963},
{0.075, -0.0296644, 0.497465}, {0.175, -0.0761665, 0.498912}}

Out[187]= {{-0.525, 0.236597, 0.314079}, {-0.425, 0.201964, 0.351425}, {-0.325, 0.166556, 0.419333},
{-0.225, 0.11717, 0.437929}, {-0.125, 0.0685948, 0.466456}, {-0.025, 0.0197324, 0.490963},
{0.075, -0.0296644, 0.497465}, {0.175, -0.0761665, 0.498912}}

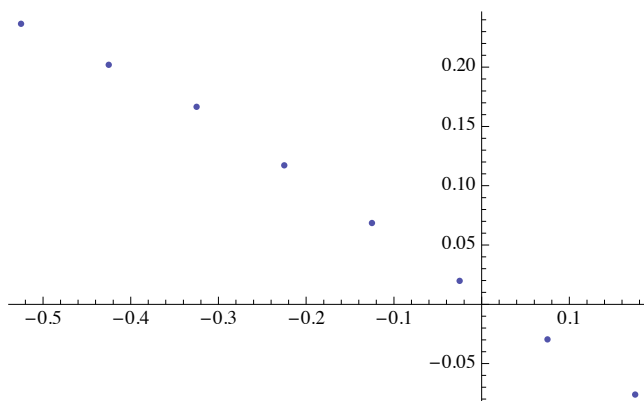In[188]:= `Show[Map[Plot[#[[2]] + #[[3]] * th, {th, -0.3, 0.3}] &, tocke]]`

Out[188]=
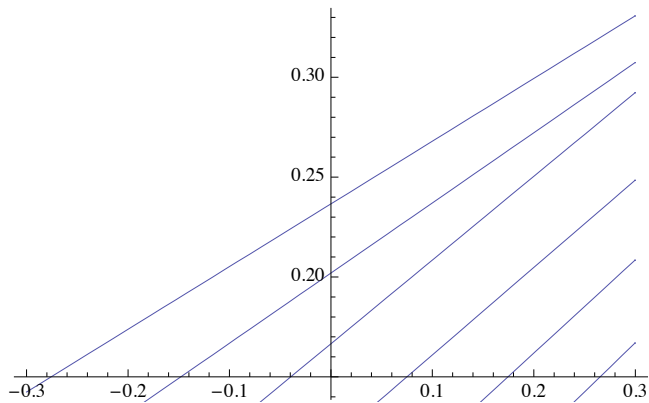
C - Dependence

In[189]:= `tockeC = Map[{#[[1]], #[[2]]} &, tocke]`

Out[189]= {{-0.525, 0.236597}, {-0.425, 0.201964}, {-0.325, 0.166556}, {-0.225, 0.11717},
   {-0.125, 0.0685948}, {-0.025, 0.0197324}, {0.075, -0.0296644}, {0.175, -0.0761665}}
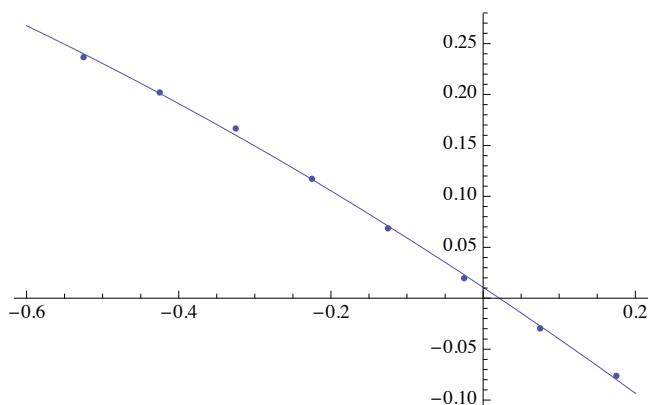
In[190]:= `ListPlot[tockeC]`

Out[190]=

In[220]:= `fitC = FindFit[tockeC, d * x^2 + f * x + g, {d, f, g}, x]`

Out[220]= {d → -0.11451, f → -0.496808, g → 0.010675}

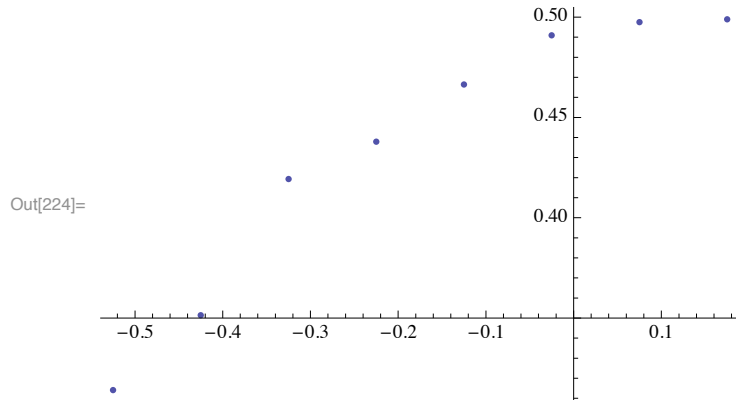In[221]:= `Show[ListPlot[tockeC], Plot[d * x^2 + f * x + g /. fitC, {x, -0.6, 0.2}]]`

Out[221]=

B - Dependence

In[223]:= **tockeB = Map[{#[[1]], #[[3]]} &, tocke]**

Out[223]= {{-0.525, 0.314079}, {-0.425, 0.351425}, {-0.325, 0.419333}, {-0.225, 0.437929},
    {-0.125, 0.466456}, {-0.025, 0.490963}, {0.075, 0.497465}, {0.175, 0.498912}}

In[224]:= **ListPlot[tockeB]**

Out[224]=

In[236]:= **fitB = FindFit$\left[\text{tockeB}, \ d*x^2 + f*x + g, \{d, f, g\}, x\right]$**

Out[236]= {d → -0.424396, f → 0.121396, g → 0.491092}

In[238]:= **Show$\left[\text{ListPlot[tockeB], Plot}\left[\ d*x^2 + f*x + g /. \text{fitB}, \{x, -0.5, 0.2\}\right], \text{PlotRange} → \text{All}\right]$**

Out[238]=