Problem_6

In [1]:
```
using LinearAlgebra
using Statistics
using Plots
```

```
(process:35568): GLib-GIO-WARNING **: 12:03:34.263: Unexpectedly, UWP app `
AcerIncorporated.PredatorSenseV30_3.0.3136.0_x64__48frkmn4z8aw4' (AUMId `Ac
erIncorporated.PredatorSenseV30_48frkmn4z8aw4!CentenialConvert') supports 1
extensions but has no verbs
```

In [2]:
```
t = LinRange(-0.75, 0.25, 7)
```

Out[2]:
```
7-element LinRange{Float64}:
 -0.75,-0.583333,-0.416667,-0.25,-0.0833333,0.0833333,0.25
```

In [3]:
```
b = [0,-0.1,0.5,0,1,0.8,0.5]
```

Out[3]:
```
7-element Vector{Float64}:
  0.0
 -0.1
  0.5
  0.0
  1.0
  0.8
  0.5
```

In [4]:
```
A = [1 t[1] t[1]^2 t[1]^3 0 0 0 0;
1 t[2] t[2]^2 t[2]^3 0 0 0 0;
1 t[3] t[3]^2 t[3]^3 0 0 0 0;
1 t[4]-1 t[4]^2-2*t[4] t[4]^3-3*t[4]^2 -1 1-t[4] 2*t[4]-t[4]^2 3*t[4]^2-t[4
0 0 0 0 1 t[5] t[5]^2 t[5]^3;
0 0 0 0 1 t[6] t[6]^2 t[6]^3;
0 0 0 0 1 t[7] t[7]^2 t[7]^3
]
```

Out[4]:
```
7×8 Matrix{Float64}:
 1.0  -0.75      0.5625    -0.421875   0.0  …   0.0          0.0
 1.0  -0.583333  0.340278  -0.198495   0.0      0.0          0.0
 1.0  -0.416667  0.173611  -0.072338   0.0      0.0          0.0
 1.0  -1.25      0.5625    -0.203125  -1.0     -0.5625       0.203125
 0.0   0.0       0.0        0.0        1.0      0.00694444  -0.000578704
 0.0   0.0       0.0        0.0        1.0  …   0.00694444   0.000578704
 0.0   0.0       0.0        0.0        1.0      0.0625       0.015625
```

In [5]:
```
x = A\b
```

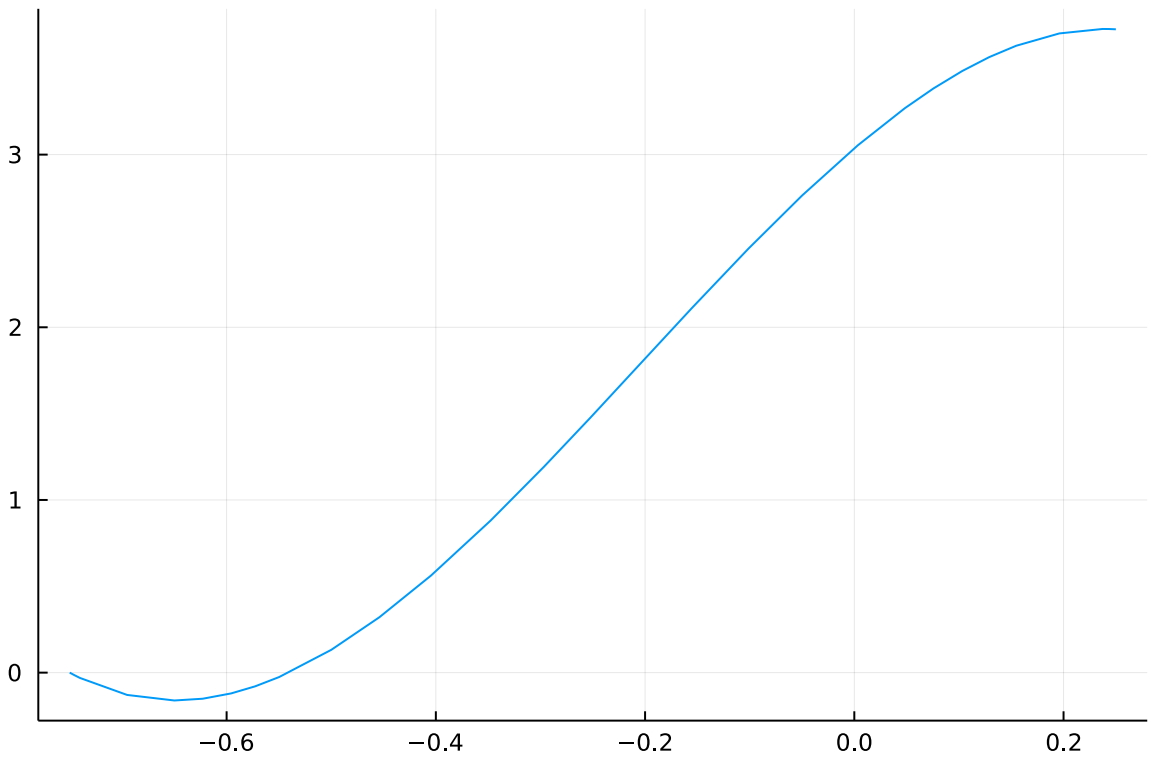
Out[5]:
```
8-element Vector{Float64}:
   3.0365649894310294
   5.163477847186154
  -6.848976101462172
 -11.11370062940695
   0.9459003173764363
  -1.3336012695057469
  -6.6096457022068895
  19.238582808827527
```

In [6]:
```
p(t) = x[1] + x[2]*t + x[3]*(t^2) + x[4]*(t^3)
q(t) = x[5] + x[6]*t + x[7]*(t^2) + x[8]*(t^3)
```

Out[6]:
```
q (generic function with 1 method)
```

In [7]:
```
Plots.plot(p, -0.75,0.25, legend = false)
```

Out[7]:



In [8]:
```
Plots.plot(q, -0.75,0.25, legend = false)
```

Out[8]: