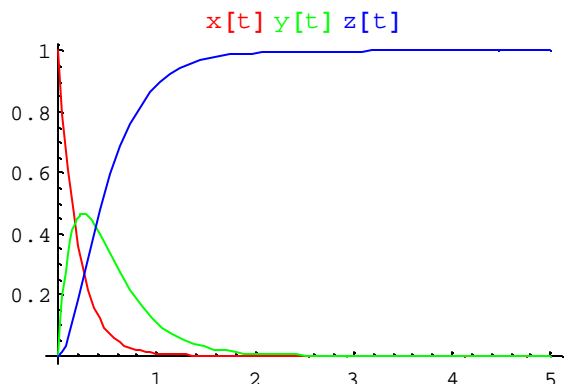


```

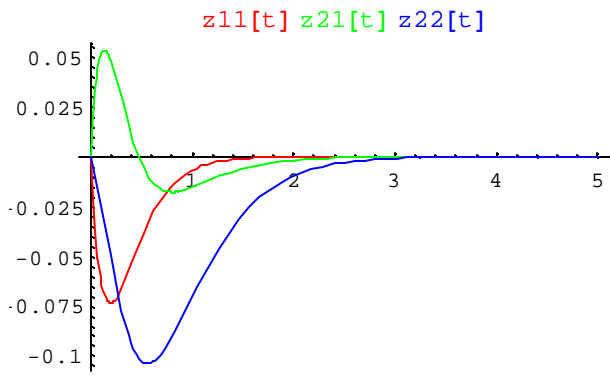
In[138]:= (* Problems 1 and 2 *)
k1 = 5
k2 = 3
"Problems 1 and 2"
NDSolve[{x'[t] == -k1 x[t], x[0] == 1,
  y'[t] == k1 x[t] - k2 y[t], y[0] == 0,
  z'[t] == k2 y[t], z[0] == 0,
  z11'[t] == -x[t] - k1 z11[t], z11[0] == 0,
  z21'[t] == x[t] + k1 z11[t] - k2 z21[t], z21[0] == 0,
  z22'[t] == -y[t] - k2 z22[t], z22[0] == 0},
{x, y, z, z11, z21, z22}, {t, 0, 5}]
Plot[Evaluate[{x[t], y[t], z[t]} /. %], {t, 0, 5}, PlotRange -> All,
PlotStyle -> {{RGBColor[1, 0, 0]}, {RGBColor[0, 1, 0]}, {RGBColor[0, 0, 1]}},
PlotLabel -> StyleForm[StyleForm["x[t]", FontColor -> RGBColor[1, 0, 0]]
StyleForm["y[t]", FontColor -> RGBColor[0, 1, 0]] StyleForm["z[t]",
FontColor -> RGBColor[0, 0, 1]], FontSize -> 12, FontWeight -> "Bold"]]
Plot[Evaluate[{z11[t], z21[t], z22[t]} /. %%], {t, 0, 5}, PlotRange -> All,
PlotStyle -> {{RGBColor[1, 0, 0]}, {RGBColor[0, 1, 0]}, {RGBColor[0, 0, 1]}},
PlotLabel -> StyleForm[StyleForm["z11[t]", FontColor -> RGBColor[1, 0, 0]]
StyleForm["z21[t]", FontColor -> RGBColor[0, 1, 0]] StyleForm["z22[t]",
FontColor -> RGBColor[0, 0, 1]], FontSize -> 12, FontWeight -> "Bold"]]

Out[138]= 5
Out[139]= 3
Out[140]= Problems 1 and 2
Out[141]= {{x -> InterpolatingFunction[{{0., 5.}}, <>],
y -> InterpolatingFunction[{{0., 5.}}, <>], z -> InterpolatingFunction[{{0., 5.}}, <>],
z11 -> InterpolatingFunction[{{0., 5.}}, <>],
z21 -> InterpolatingFunction[{{0., 5.}}, <>],
z22 -> InterpolatingFunction[{{0., 5.}}, <>]}}

```



Out[142]= - Graphics -



Out[143]= - Graphics -