Console

For n = 0

 K11 = -0.5
 K12 = 0.5
 K22 = 1.125
 Z1 = -0.1875
 K21 = -0.09375
 Y1 = 0.703125

For n = 1

 K11 = -0.09375
 K12 = 0.247192
 K22 = 0.451552
 Z2 = 0.161872
 K21 = 0.080936
 Y2 = 0.696718

For n = 0

 K11 = -0.75
 K12 = 0.5
 K22 = 1.125
 Z1 = -0.6875
 K21 = -0.34375
 Y1 = 0.453125

For n = 1

 K11 = -0.34375
 K12 = 0.102661
 K22 = 0.154449
 Z2 = -0.558945

K21 = -0.279472
Y2 = 0.141514

For n = 0

 K11 = -0.58855
 K12 = 0.5
 K22 = 1.125
 Z1 = -0.3646
 K21 = -0.1823
 Y1 = 0.614575

For n = 1

 K11 = -0.1823
 K12 = 0.188851
 K22 = 0.322747
 Z2 = -0.108801
 K21 = -0.0544005
 Y2 = 0.496225

Hence the solution is y(0) = 1, y(0.5) = 0.6146   and y(1) = 0.5