**A Appendix**

**Exercise 10**

**A.1 Codes**

def snail(g,x,u0,n,xmin,xmax):

u = u0

P1 = plot(x,x,xmin,xmax,color='gray')

for i in range(n):

P1 += line([[u,u],[u,g(u)],[g(u),g(u)]],color = 'red', linestyle = '--')

u = g(u)

P1 += g.plot(x,xmin,xmax,color='blue', linestyle = ':',axes\_labels=['z','y'])

P1.axes\_labels(['y','z'])

P1 += arrow((u,u),(u,g(u)), color ='red', width = 0, linestyle = '--')

P1 += arrow((u,g(u)),(g(u),g(u)),color = 'red', width = 0, linestyle = 'dashed')

P2 = text('$z=y$', (0.25,0.3), fontsize=15)

P3 = text('$z=3.5\, y\, (1-y)$',(0.8,0.1), fontsize =15)

P = P1+P2+P3

P.show()

g(x)=3.55\*x\*(1-x)

snail(g,x,0.1,5,0,1)

**A.2 Codes**

def snail(g,x,u0,n,xmin,xmax):

u = u0

P1 = plot(x,x,xmin,xmax,color='gray')

for i in range(n):

P1 += line([[u,u],[u,g(u)],[g(u),g(u)]],color = 'red', linestyle = '--')

u = g(u)

P1 += g.plot(x,xmin,xmax,color='blue', linestyle = ':',axes\_labels=['z','y'])

P1.axes\_labels(['y','z'])

P1 += arrow((u,u),(u,g(u)), color ='red', width = 0, linestyle = '--')

P1 += arrow((u,g(u)),(g(u),g(u)),color = 'red', width = 0, linestyle = 'dashed')

P2 = text('$z=y$', (0.5,0.6), fontsize=15)

P3 = text('$z=3.55\, y\, e^{-y}$',(0.35,1.4), fontsize =15)

P = P1+P2+P3

P.show()

g(x)=3.55\*x\*exp(-x)

snail(g,x,0.1,2,0,2)