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)
```