import matplotlib.pyplot as pyplot  
import numpy

from matplotlib import rc  
rc("font",family="serif")

%matplotlib inline

# define values

l = 10  
a = 1  
s = 0.2  
prod\_elast = 0.33  
d = 0.1

# define function

c = numpy.linspace(0,40,100)  
f = []  
inv = []  
dep = []

i = 0  
while i < len(c):  
 f.append(s\*a\*c[i]\*\*prod\_elast\*l\*\*(1-prod\_elast)-d\*c[i])  
 inv.append(s\*a\*c[i]\*\*prod\_elast\*l\*\*(1-prod\_elast))  
 dep.append(-d\*c[i])

i += 1

# plot phase diagrams

pyplot.plot(c,f, color = "red")  
pyplot.plot(c,inv, color = "blue")  
pyplot.plot(c,dep, color = "green")  
pyplot.axhline(y=0, color = "grey")  
pyplot.grid()

pyplot.title("Phasendiagramm")  
pyplot.xlabel("K")  
pyplot.ylabel("dK/dt")

pyplot.legend(["dK/dt", "Investitionen", "Abschreibungen"])

pyplot.show()