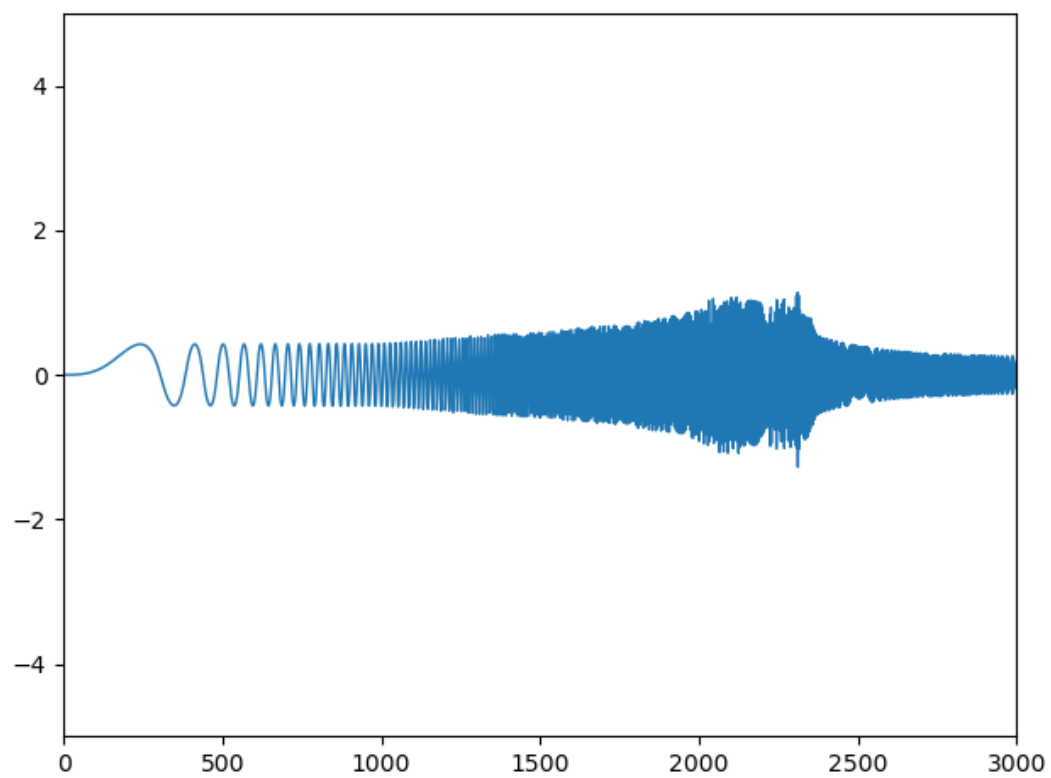
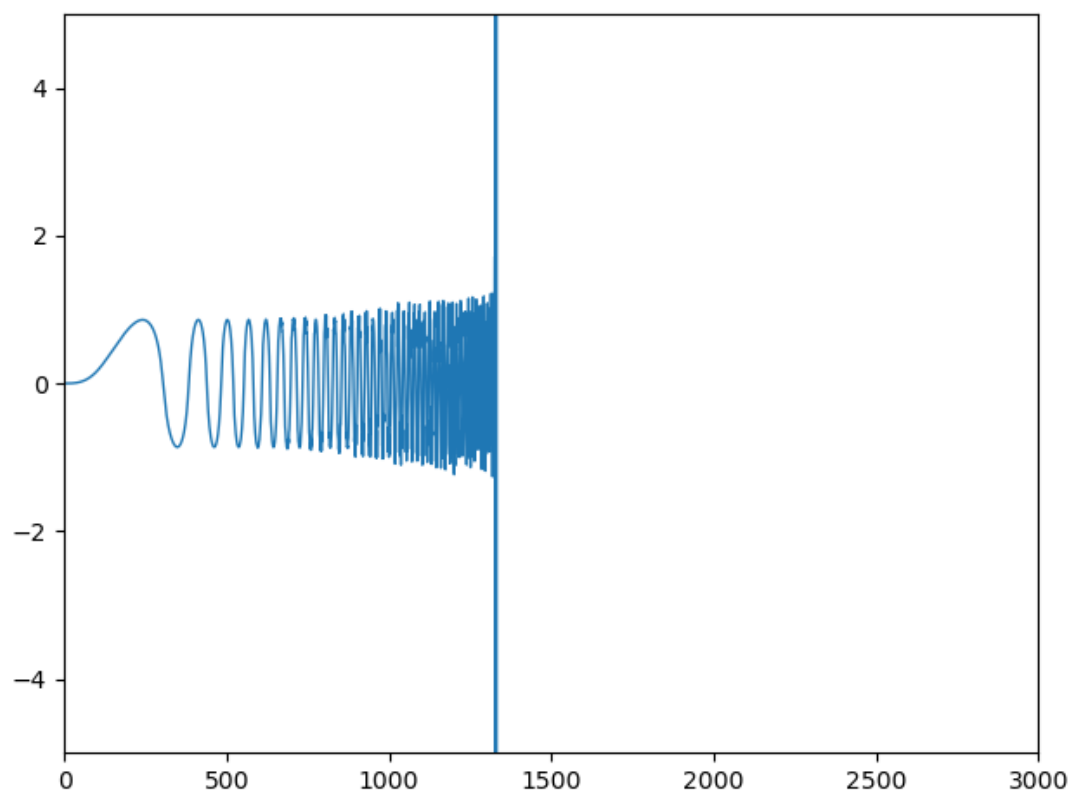


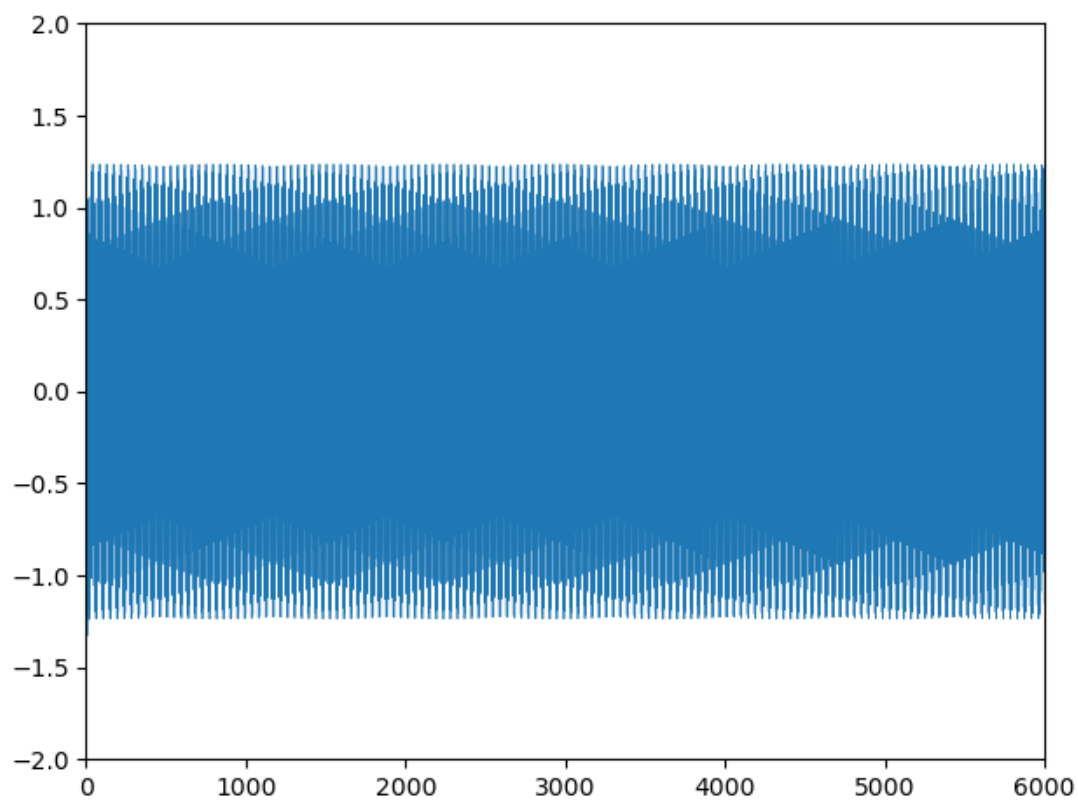
Plot for $A=0.1$



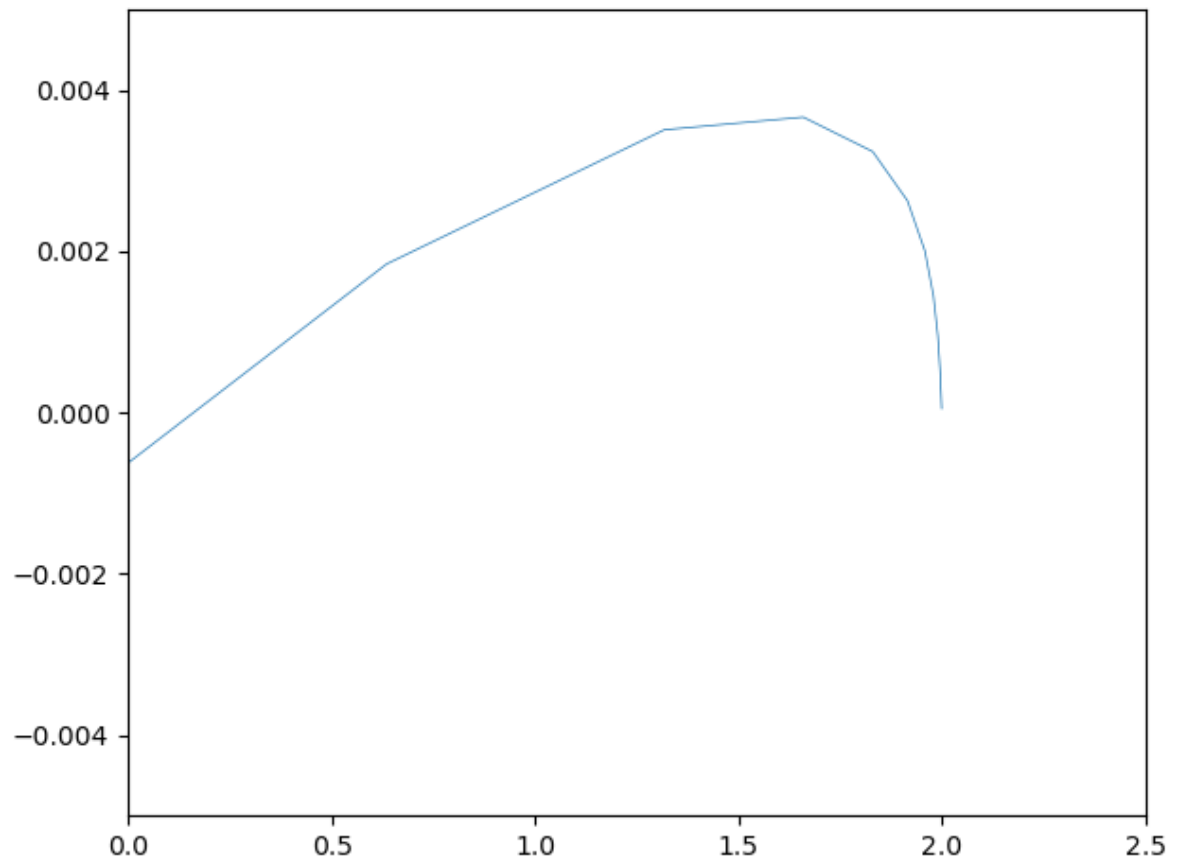
Plot for $A=0.5$



Plot for $A=1.5$ (it goes to infinity)



Plot for x_{\max}



Plot of the resonance curve, I probably did something wrong, because I don't have a second peak

Python Code:

```
import scipy.integrate as integrate
import scipy.special as special
import matplotlib.pyplot as plt
from numpy import sin
#constants
T=3000
y=0.5
w=0
#w=2
dw=2/3000
A=1.5
t=0
dt=0.01
x=0
v=0
k=0
L_t=[]
L_x=[]

while t<=T:
    k=k+1
    t=t+dt
    dw+=dw
    w=1-dw
    a=-x*(1+x**2)-y*v+A*sin((w*t**2)/(2*T))
    #a=-x-y*v+A*sin(w*t)
    v+=a
    x+=v
    L_t.append(t) #Lists for plots
    L_x.append(x)
plt.axis([0,2.5, -0.005, 0.005])
plt.plot(L_t,L_x, linewidth=0.5)
plt.show()
```