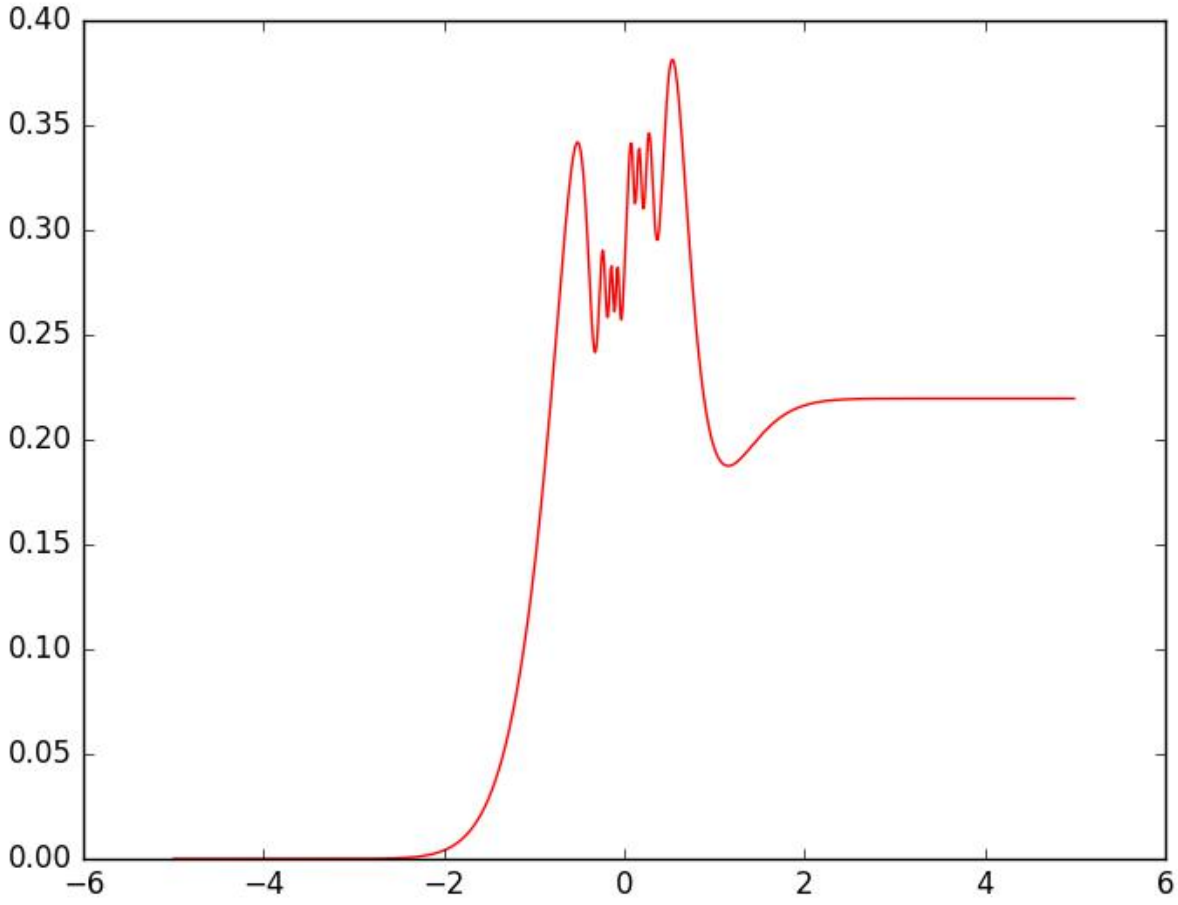
15. Niech

$$F(x) = \int_{-\infty}^{x} \cos\left(\frac{1+t}{t^2+0.04}\right) e^{-t^2}\, dt \tag{12}$$

Narysuj wykres $F(x)$ oraz oblicz $\lim_{x\to\infty} F(x)$ z dokładnością 10^{-8}.

```
import numpy as n
import math as m
import matplotlib.pyplot as plt
from scipy.integrate import romberg
def f(x):
   return m.cos((1+x)/((x*x)+0.04))*m.pow(m.e,-(x*x))
x=n.arange(-10,10,0.01)
y=n.zeros(x.size)
for i in range(x.size):
   y[i]=romberg(f,-10,x[i],divmax=50)

limit=y[y.size-1]
print(limit)
plt.plot(x,y,'r')
plt.show()
```



$\text{Lim}_{x->\infty}$=0.2196119