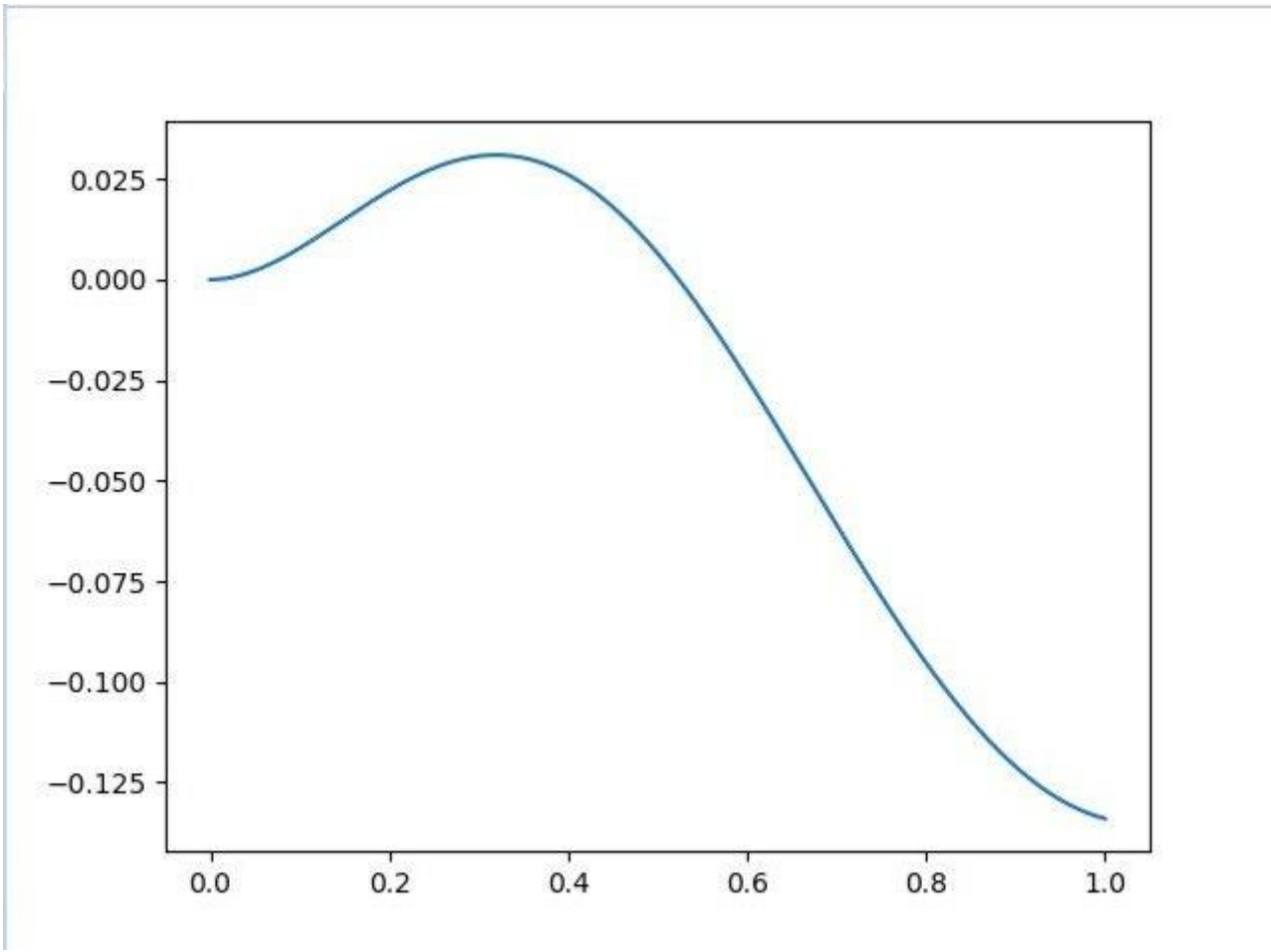
Hw6

```
<from numpy import *
import matplotlib.pyplot as plt

def f(x):
return x**2*exp(-x*2)*cos(3*x)

x = linspace(-10,10 , 51) # 51 точка между 0 и 3
y = f(x)

plt.plot(x, y)
plt.show()>
```




```
<from numpy import *
import matplotlib.pyplot as plt
def func(x):
    return x**2*exp(-x*2)*cos(3*x)
def trapezoid (a,b,n):
    h=(b-a)/(n-1)
    sum=(func(a)+func(b))/2
    for i in range (1,n-1):
        sum +=func(a+i*h)
    return h*sum
a=0
b=1
n=1000
print (trapezoid (a,b,n-1))>
```

```
>Ответ:-0.027525155343462213


```html
<from numpy import *
import matplotlib.pyplot as plt
def func(x):
    return x**2*exp(-x*2)*cos(3*x)
a=0
B=1
n=1000
def trapezoid (a,b,n):
    h=(B-a)/(n-1)
    for i in range (1,n-1):
           b=a+i*h<B
    sum=(func(a)+func(b))/2
    for i in range (1,n-1):
        sum +=func(a+i*h)
    return h*sum
print (trapezoid (a,b,n-1))
)>
>Ответ:-0.027525155343462213

{Ответ, посчитанный с помощью встроенной функции: -0.027525155343462213}
```
```