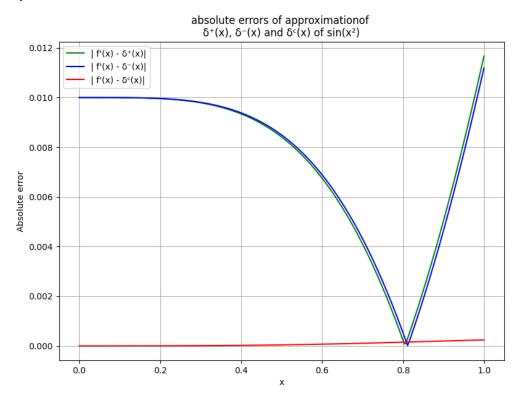
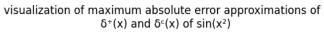
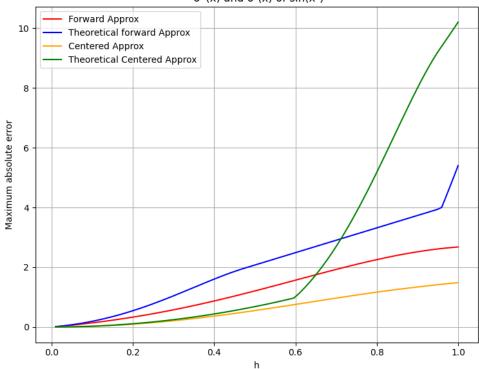


Q2)

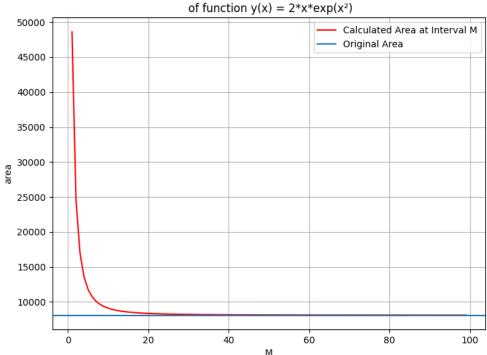




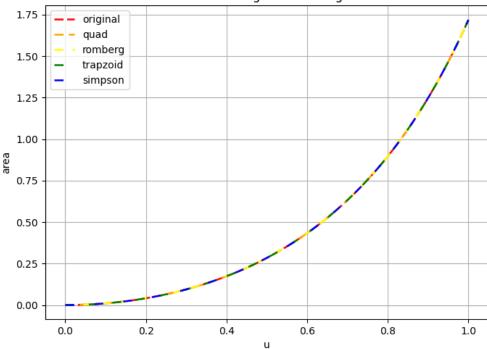


Q4)

visualization of area under the curve as a function of M
of function  $y(x) = 2*x*exn(x^2)$ 







## Q6)

```
p = Polynomial([1, 2, 3])
pd = p.derivative()
print(pd)
```

## Coefficients of the polynomial are: 2 6

```
p = Polynomial([1, 2, 3])
print(p.area(1,2))
```

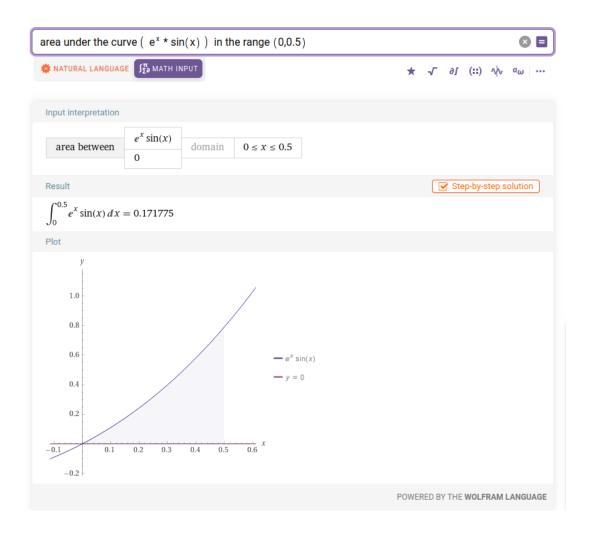
## Area in the interval [1, 2] is: 11.0

```
Calculated Area : 0.17177502333917638
Error ( Actual - Calculated ) : -2.3339176369319148e-08
```

Error within a guaranteed error of 10-8

Actual area used is 0.171775

Calculated using <a href="https://www.wolframalpha.com/">https://www.wolframalpha.com/</a>



Link of the above page