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#TRAPEZOIDAL RULE BY GIVEN FUNCTION
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```
import numpy as np  
def fun(x):  
    y1=x*x    #this func will be given to us  
    return y1  
a=int(input("enter lower limit:"))  
b=int(input("enter upper limit:"))  
n=int(input("enter number of intervals:"))  
h=(b-a)/(n-1)
```

```
x=np.zeros(n)  
y=np.zeros(n)  
for i in range(n):  
    x[i]=a+i*h  
    y[i]=fun(x[i])  
  
s=y[0]+y[n-1]  
for i in range(1,n-1):  
    s+=2*(y[i])  
print(s)  
val=(s*h)/2  
print("value by integration is:",val)
```

```
"""enter lower limit:1  
enter upper limit:10  
enter number of intervals:10  
669.0  
value by integration is: 334.5"""
```

