#采用复化辛普森公式计算数值积分

import numpy as np

a = 0 # 积分下限

b = np.pi # 积分上限

n = 6 # 积分点个数

f = lambda x: np.sin(x) #y=f(x)自定义

h = (b-a)/n

x = np.arange(a,b,h)

y = f(x)

mx = x+h/2

my = f(mx)

r = h/6\*(4\*sum(my)+2\*sum(y[1:])-f(a)-f(b))

print('---------------------------------------------------------\n')

print('I=','{:.5f}'.format(r))