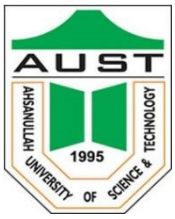


Ahsanullah University of Science and Technology

LAB REPORT

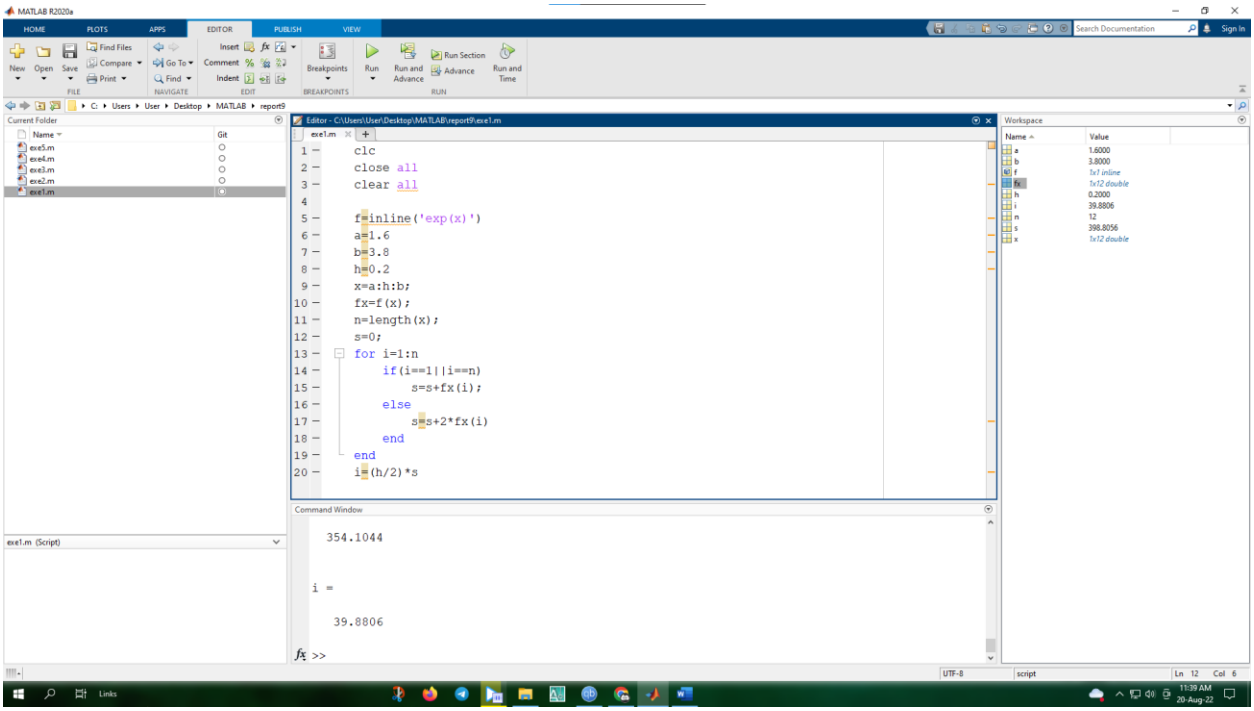
Course No: *EEE3110*
Course Name: *Numerical Technique Laboratory*

Exp No:09
Exp Name: Numerical Intergration

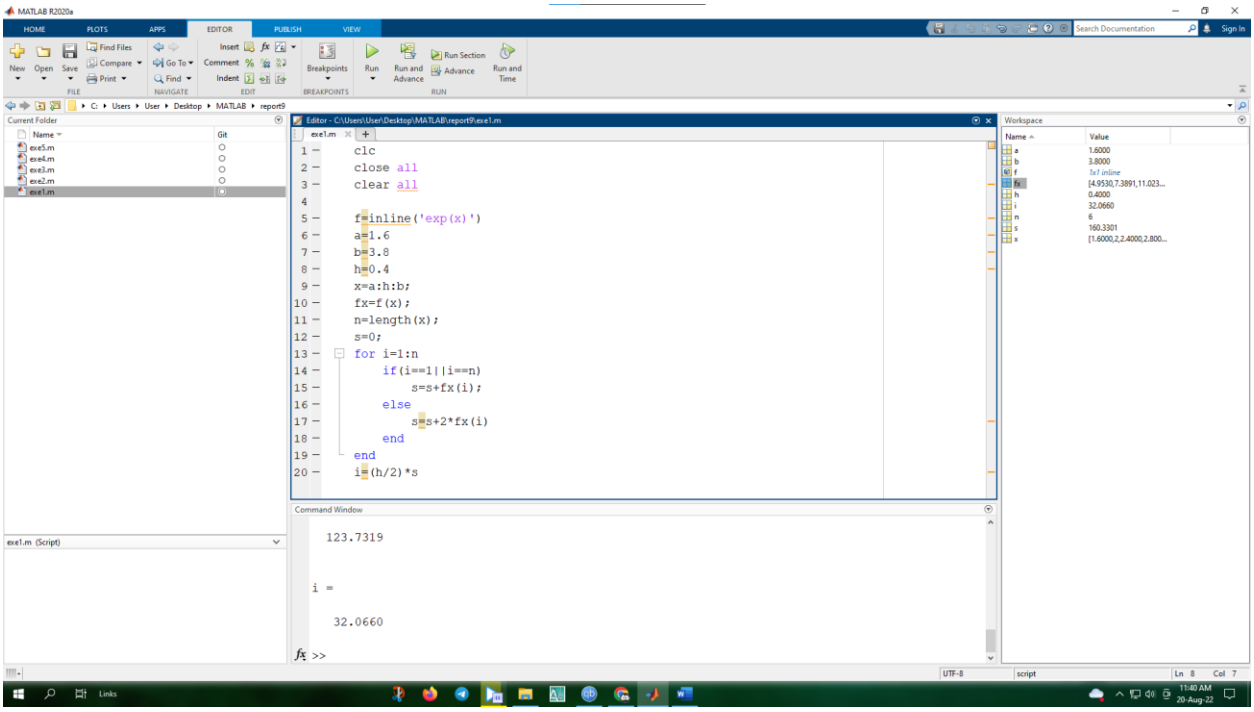
- Name: *Md. Idrak Efaz*
- ID: *190205121*
- Year: 3 , Semester: 1
- Section: B-2
- Department of *EEE*.

Exercise1

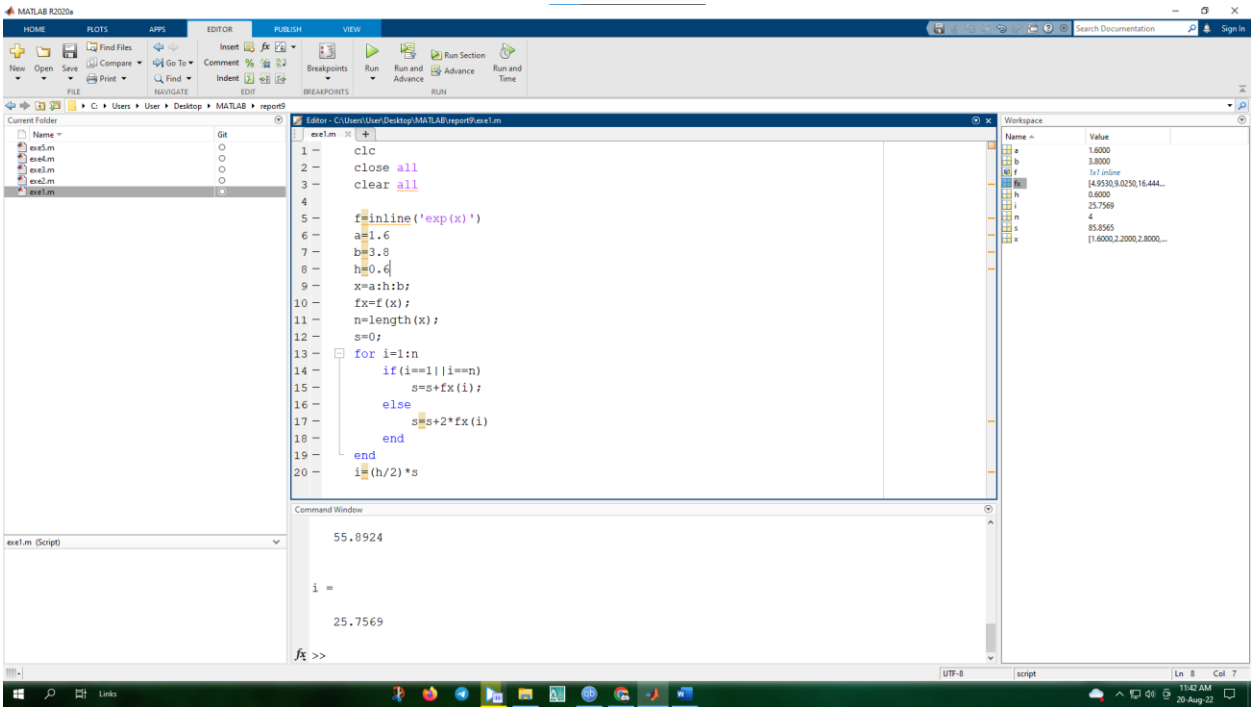
H=.2



H=.4

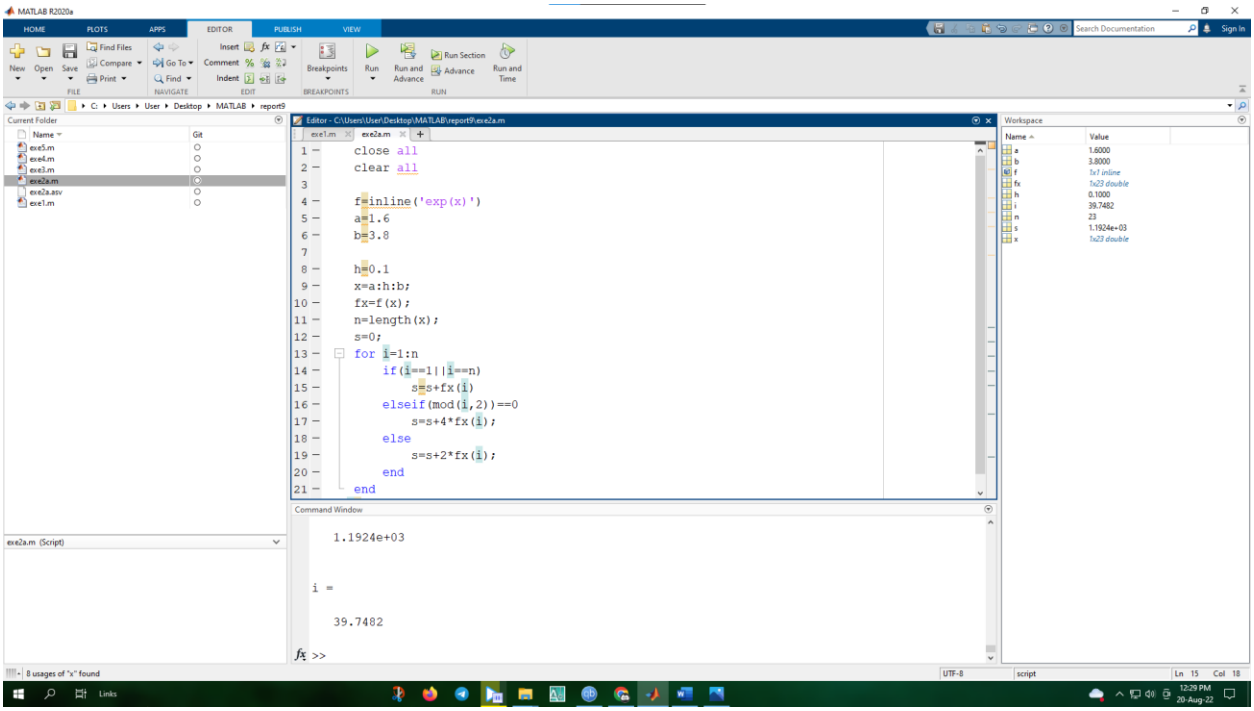

clc
close all
clear all
f=inline('exp(x)')
a=1.6
b=3.8
h=0.4
x=a:h:b;
fx=f(x);
n=length(x);
s=0;
for i=1:n
if(i==1||i==n)
s=s+fx(i);
else
s=s+2*fx(i)
end
end
i=(h/2)*s
123.7319
i =
32.0660

H=.6


clc
close all
clear all
f=inline('exp(x)')
a=1.6
b=3.8
h=0.6
x=a:h:b;
fx=f(x);
n=length(x);
s=0;
for i=1:n
if(i==1||i==n)
s=s+fx(i);
else
s=s+2*fx(i)
end
end
i=(h/2)*s
55.8924
i =
25.7569

Exercise2

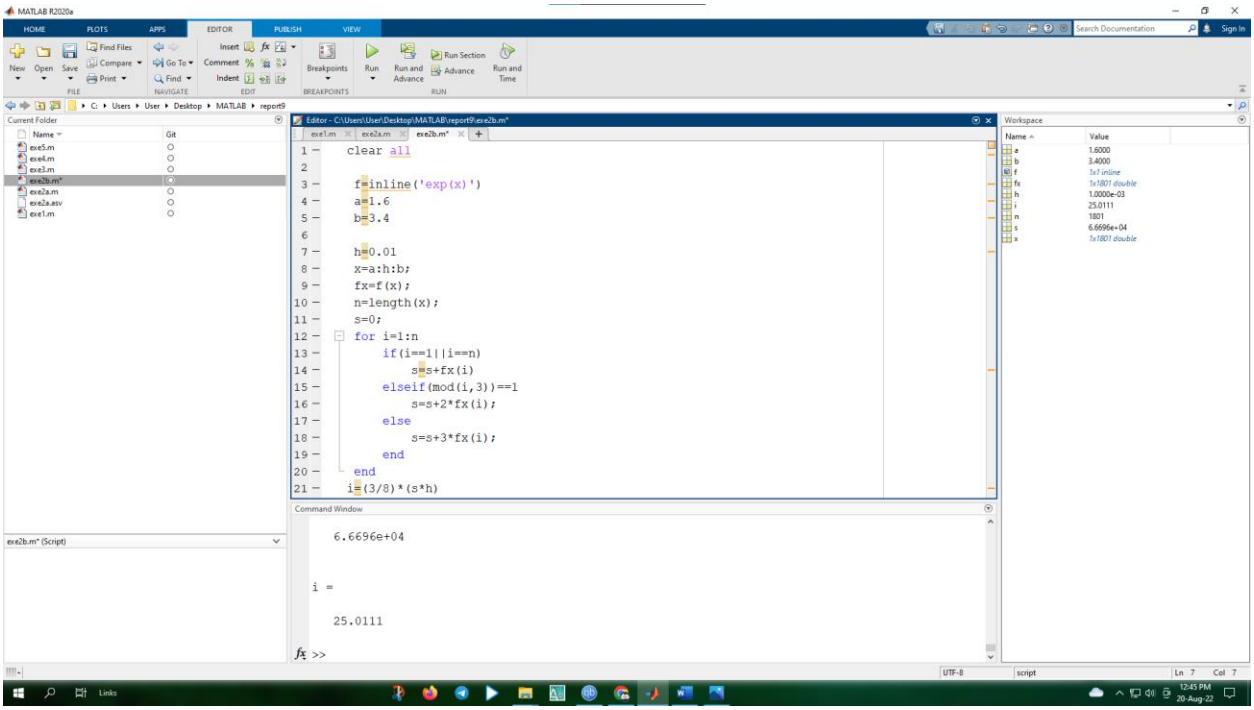
a



```
close all
clear all

f=inline('exp(x)')
a=1.6
b=3.8

h=0.1
x=a:h:b;
fx=f(x);
n=length(x);
s=0;
for i=1:n
    if(i==1||i==n)
        s=s+fx(i)
    elseif(mod(i,2))==0
        s=s+4*fx(i);
    else
        s=s+2*fx(i);
    end
end
```

```
    1.1924e+03


i =

    39.7482

fx >>
```

b

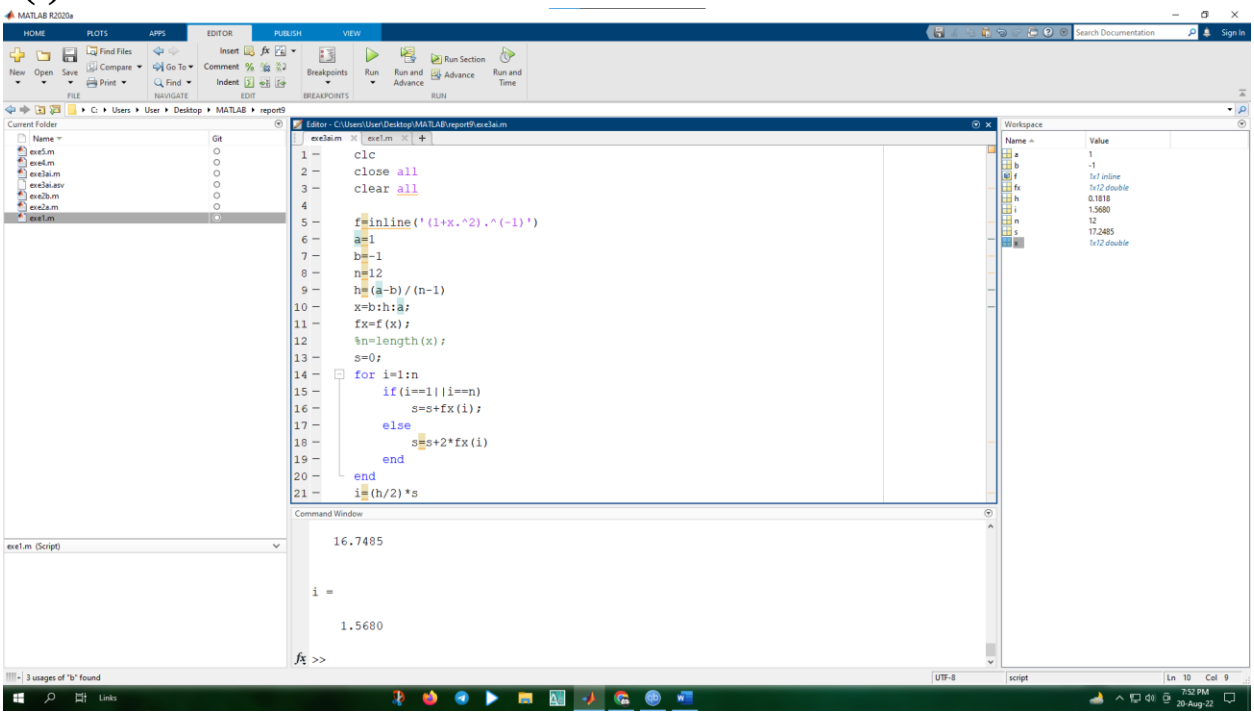


```
clear all

f=inline('exp(x)')
a=1.6
b=3.4

h=0.01
x=a:h:b;
fx=f(x);
n=length(x);
s=0;
for i=1:n
    if(i==1||i==n)
        s=s+fx(i)
    elseif(mod(i,3))==1
        s=s+2*fx(i);
    else
        s=s+3*fx(i);
    end
end
i=(3/8)*(s*h)
```

```
    6.6696e+04


i =

    25.0111

fx >>
```

Exercise3

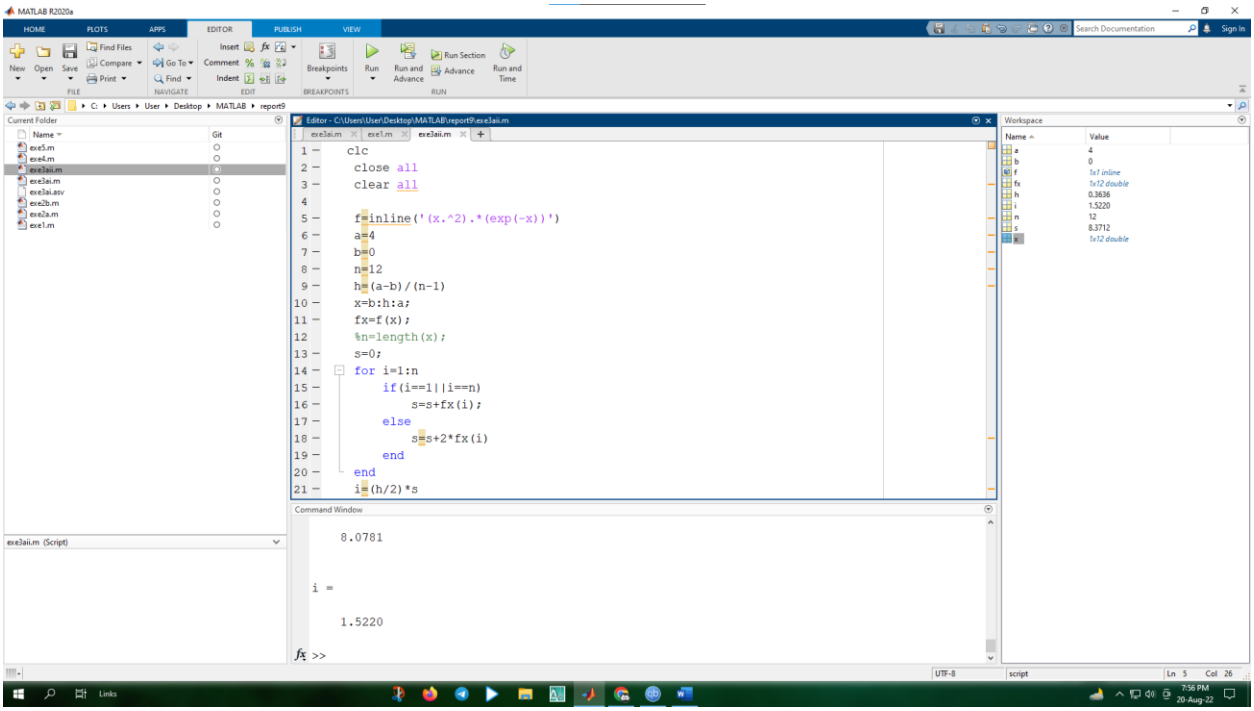
a(i)



```
clc
close all
clear all

f=inline('(1+x.^2).^(-1)')
a=1
b=-1
n=12
h=(a-b)/(n-1)
x=b:h:a;
fx=f(x);
%n=length(x);
s=0;
for i=1:n
    if(i==1||i==n)
        s=s+fx(i);
    else
        s=s+2*fx(i)
    end
end
i=(h/2)*s
```

```
    16.7485


i =

    1.5680
```

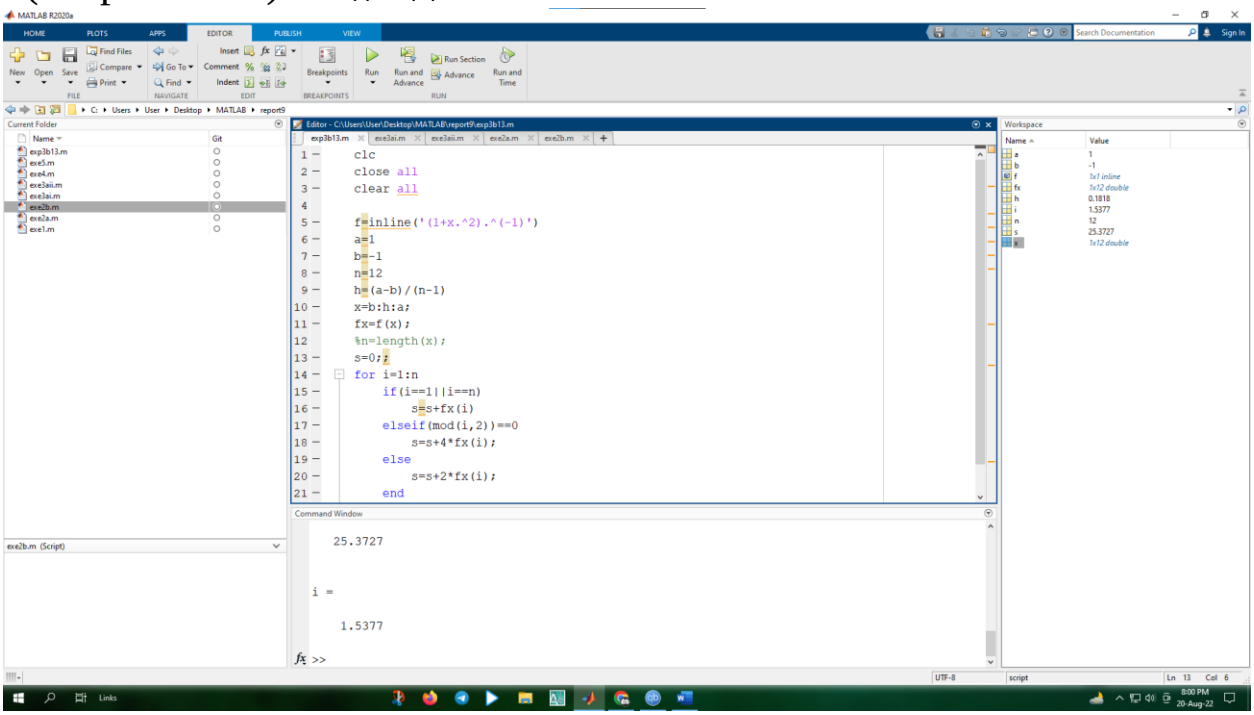
a(ii)

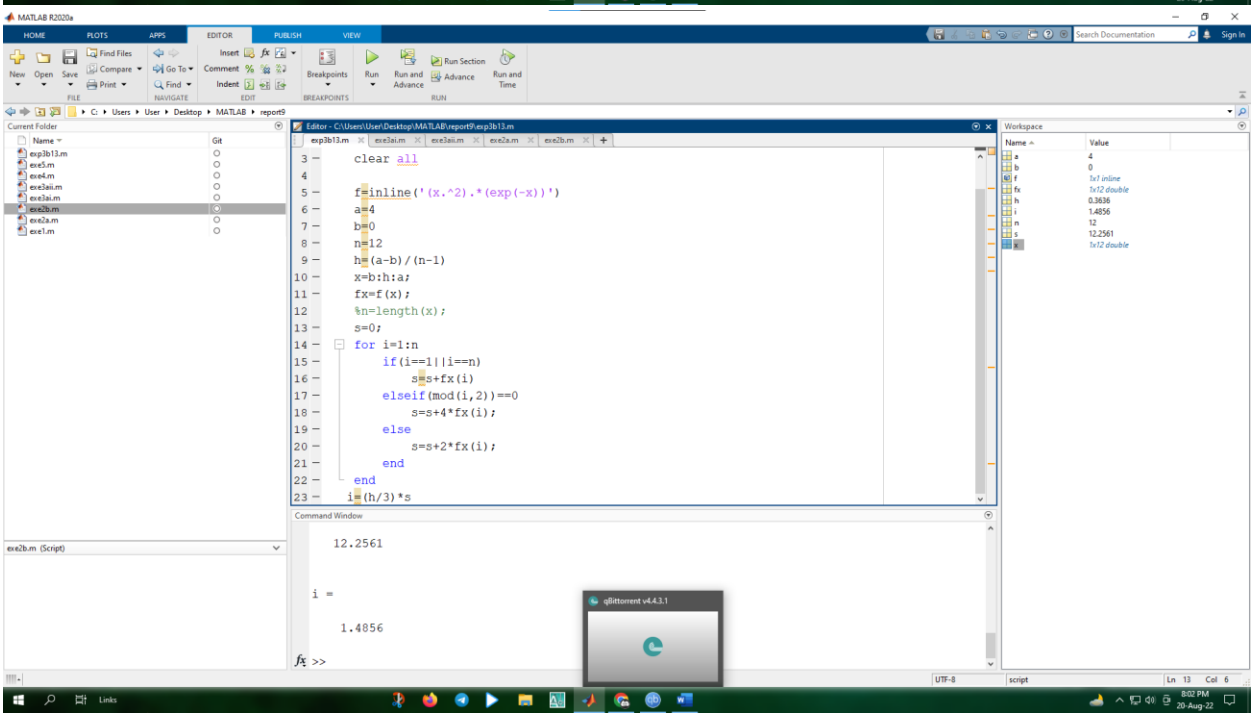


```
clc
close all
clear all

f=inline('(x.^2).*(exp(-x))')
a=4
b=0
n=12
h=(a-b)/(n-1)
x=b:h:a;
fx=f(x);
%n=length(x);
s=0;
for i=1:n
    if(i==1||i==n)
        s=s+fx(i);
    else
        s=s+2*fx(i)
    end
end
i=(h/2)*s
```

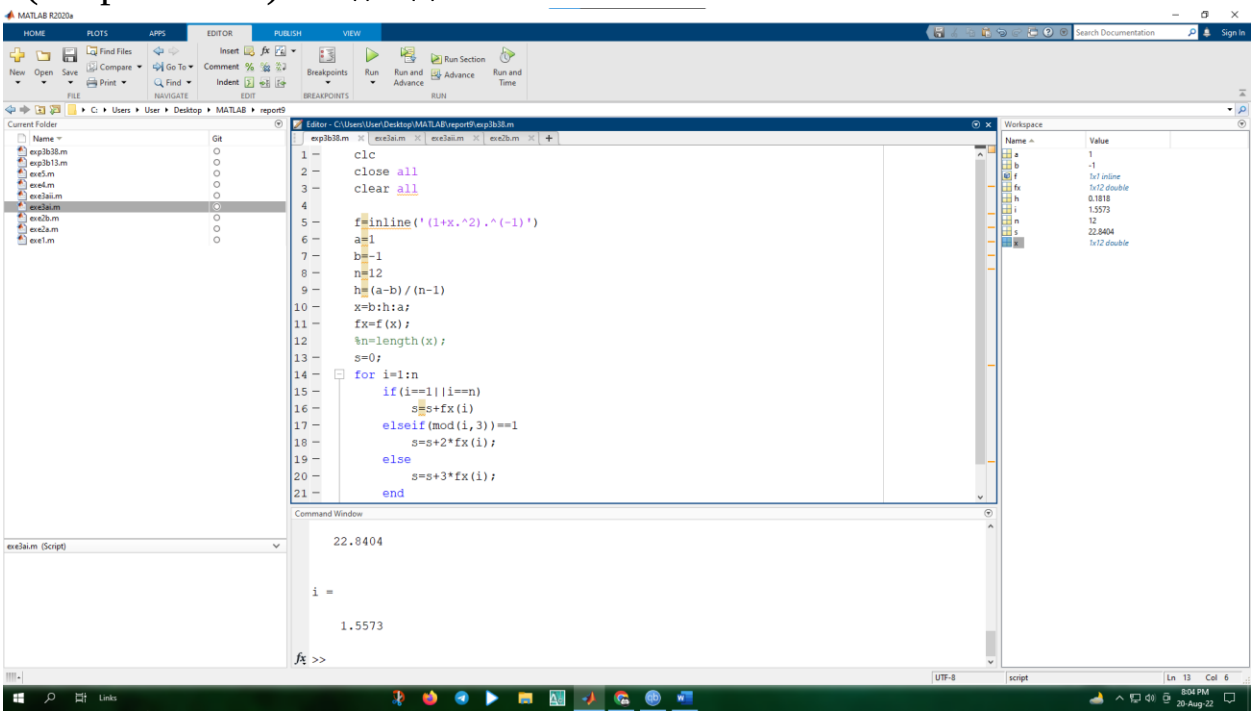
```
    8.0781


i =

    1.5220
```

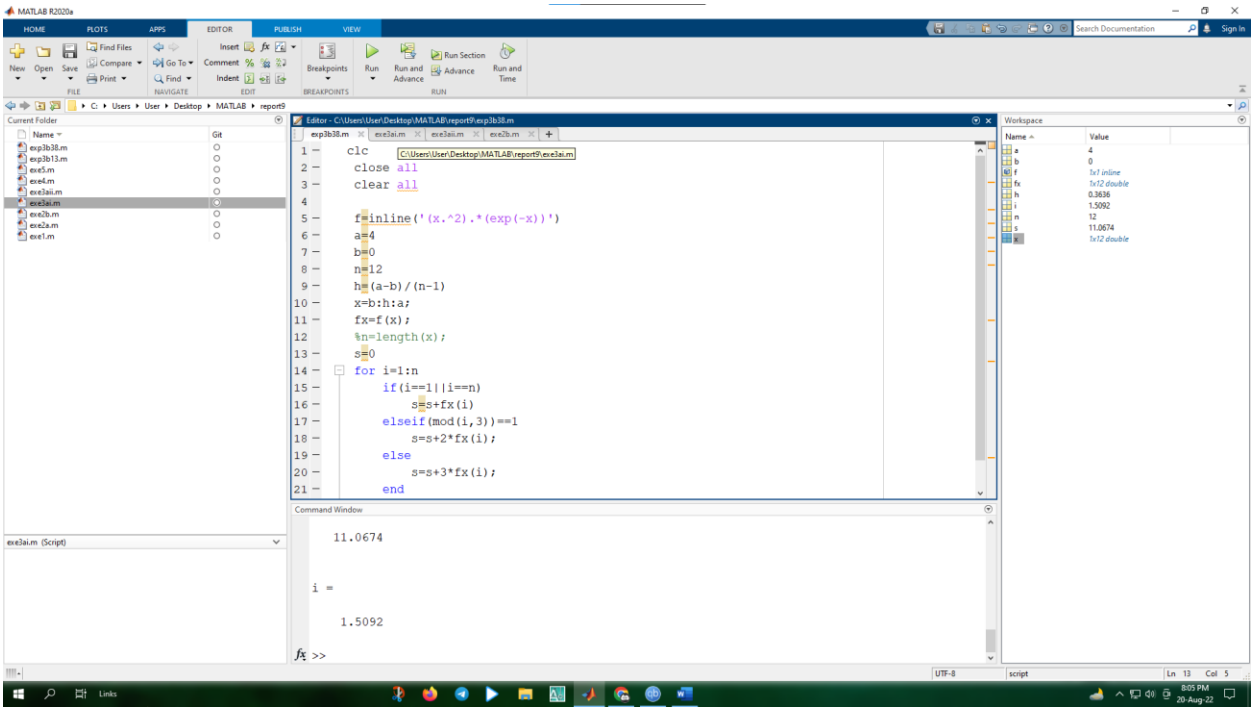
b(simpson's1/3) for a(i)&a(ii)





b(simpson’s3/8) for a(i)&a(ii)





Exercise 4&5 (**Adaptive integration**)