



The image shows a MATLAB Editor window with a script named 'ass5.m' and a Command Window below it. The script contains three blocks of code, each calculating the integral of $\frac{100}{x} \sin(10/x)$ using different methods and comparing them to an exact value.

```
1 integrand=@(x) (100 ./x) .* (sin(10 ./x));
2 exact=-18.79829683678703;
3 x=linspace(1,3,10);
4 A=arbitrary_spacing(x,integrand(x));
5 PD=100*abs((A-exact)/exact);
6 disp([A, exact, PD])
7
8
9 integrand=@(x) (100 ./x) .* (sin(10 ./x));
10 exact=-18.79829683678703;
11 y=linspace(0,log(3),10);
12 newx=exp(y);
13 A2 = arbitrary_spacing(newx,integrand(newx));
14 PD2 = 100*abs((A2-exact)/exact);
15 disp([A2, exact, PD2])
16
17
18 integrand=@(x) (100 ./x) .* (sin(10 ./x));
19 exact=-18.79829683678703;
20 y=linspace(0,log(3),10);
21 xofy=exp(y);
22 A3=arbitrary_spacing(y, xofy.*integrand(xofy));
23 PD3=100*abs((A3-exact)/exact);
24 disp([A3,exact, PD3])
```

The Command Window shows the output of the script, displaying three rows of results for the three different integration methods. A yellow banner at the top of the Command Window reads: "New to MATLAB? See resources for [Getting Started](#)."

```
>> ass5
-22.7015 -18.7983 20.7638

-19.6448 -18.7983 4.5031

-19.4646 -18.7983 3.5445

fx >>
```

```
Editor - C:\Users\ivani\OneDrive\Documents\MATLAB\ass6.m
ass5.m x lec7.m x lec8.m x ctraprul.m x ass6.m x simprul.m x +
1 myf=@(x) abs((4.*x.^2) .* (exp(-x.^2)) - (2.*exp(-x.^2)));
2 fplot(myf,[0,2])
3
4
5 integrand = @(x) exp(-x^2);
6 exact = 0.882081;
7 A = ctraprul(integrand,0,2,10);
8 error = abs(A-exact);
9 disp([A, exact, error])
10 xlabel('radius')
11 ylabel('abs(4x^2 .* exp(-x^2) - 2exp(-x^2))')
```

Command Window

New to MATLAB? See resources for [Getting Started](#).

```
>> ass6
    0.8818    0.8821    0.0003

fx >>
```

