

Question 1

The image shows the MATLAB R2018a - academic use interface. The main window is divided into several panes:

- Current Folder:** Displays a list of files and folders in the current directory. The list includes folders like 'Add-in Express', 'Adobe', 'Animotica', 'assignment', 'Autodesk Application Manager', 'Blackmagic Design', 'cache', 'CPY_SAVES', 'CSlab1', 'Custom Office Templates', 'Downloads', 'FlightGear', 'Inventor Server SDK ACAD 2015', 'Java', 'LTspiceXVII', 'MATLAB', 'NetBeansProjects', 'Processing', and 'Visual Studio 2017'. It also lists files like 'WB Games', 'Zoom', 'lghlogs.doc', 'OSBitTorrent.pdf', '10836b46b0dbecf38e56d32a55ed4d16_easy-simple-drawings-fr...', 'banner.xd', 'cc_20200111_160535.reg', 'ccd1.png', 'ccd5.png', 'Ch-12.docx', 'chaos.cpp', 'Dark Web and Drugs.docx', 'desktop.ini', 'DONT OPEN.txt', 'fig.txt', and 'java sites.txt'.
- Editor:** Displays a script named 'Untitled11.m'. The script contains the following code:

```
1 - r = input('enter radius')
2 - h = input('enter height')
3 - SA = 2*pi*r*(r+h)
```
- Command Window:** Shows the execution of the script. The prompt is '>> Untitled11'. The user enters 'radius10' and 'height10'. The output shows 'r = 10' and 'h = 10'. The final output is 'SA = 1.2566e+03'.
- Workspace:** Displays a table of variables in the workspace. The table has two columns: 'Name' and 'Value'. The variables are 'h' (10), 'r' (10), and 'SA' (1.2566e+03).

The status bar at the bottom shows the Windows taskbar with various application icons and the system clock indicating 02:26 PM on 28-08-2020.

Question 2

The image shows the MATLAB R2018a - academic use interface. The main window displays the Command Window with the following code and output:

```
>> a = eye(4,5)

a =

     1     0     0     0     0
     0     1     0     0     0
     0     0     1     0     0
     0     0     0     1     0

>> a = ones(4,5)

a =

     1     1     1     1     1
     1     1     1     1     1
     1     1     1     1     1
     1     1     1     1     1

>> a = zeros(4,5)

a =

     0     0     0     0     0
     0     0     0     0     0
     0     0     0     0     0
     0     0     0     0     0

fx >>
```

The Workspace window on the right shows the following variables:

Name	Value
a	4x5 double
h	10
r	10
SA	1.2566e+03

The interface includes a menu bar (HOME, PLOTS, APPS, EDITOR, PUBLISH, VIEW), a toolbar with icons for file operations, editing, and running, and a file explorer on the left showing the current folder structure. The status bar at the bottom indicates the system time as 02:34 PM on 28-08-2020.

Question 3

The image shows the MATLAB R2018a - academic use interface. The main window displays the Command Window with the following code and output:

```
New to MATLAB? See resources for Getting Started.  
  
a =  
    1     2     3  
    4     5     6  
    7     8     9  
   -1    -2     0  
  
>> m = min(a(:))  
  
m =  
   -2  
  
>> M = max(a(:))  
  
M =  
     9  
  
>> [x,y] = find(a==m)  
  
x =  
     4  
  
y =  
     2  
  
>> [x,y] = find(a==M)  
  
x =  
     3  
  
y =  
     3
```

The Workspace window on the right shows the following variables:

Name	Value
a	4x3 double
h	10
m	-2
M	9
n	4.9000
r	10
SA	1.2366e+03
x	3
y	3

The bottom status bar shows the system clock as 02:50 PM on 28-08-2020.

Question 4

The image shows the MATLAB R2018a interface with the following components:

- Current Folder:** A list of files and folders, including 'MATLAB', 'Visual Studio 2017', and 'WB Games'.
- Editor:** A script named 'Untitled11.m' with the following code:

```
1 n = input('enter dimension');
2 a = zeros(n,n);
3 b = zeros(n,1);
4 disp('enter coefficients');
5 for i=1:n
6     for j=1:n
7         a(i,j)=input('');
8     end
9 end
10 disp('enter constants');
11 for i=1:n
12     b(i,1)=input('');
13 end
14 res = linsolve(a,b);
```
- Command Window:** Shows the execution of the script with the following output:

```
>> Untitled11
enter dimension
3
enter coefficients
6
-4
0
-4
13
-4
0
-4
7
enter constants
2
0
-3
res =
0.3018
-0.0473
-0.4556
```
- Workspace:** A table showing the variables created during the execution:

Name	Value
a	[6,-4,0;-4,13,-4;0,-4,7]
ans	6
b	[2;0;-3]
h	10
i	3
j	3
m	5
M	9
n	3
r	10
res	[0.3018;-0.0473;-0.4556]
SA	1.2366e+03
x	3
y	3

Question 5

The image shows the MATLAB R2018a - academic use interface. The main window displays a script named 'Untitled11.m' with the following code:

```
1 - n = input('enter integer')
2 - if(n>=5) disp('n is greater than or equal to 5')
3 - else disp('n is less than 5')
4 - end
```

The Command Window shows the execution of the script:

```
>> Untitled11
enter integer5.5

n =

    5.5000

n is greater than or equal to 5
>> Untitled11
enter integer4.9

n =

    4.9000

n is less than 5
>>
```

The Workspace window shows the following variables:

Name	Value
a	4x3 double
h	10
m	-2
M	9
n	4.9000
r	10
SA	1.2366e+03

The Command Window also displays a message: "New to MATLAB? See resources for [Getting Started](#)."

Question 6

The image shows the MATLAB R2018a - academic use interface. The main window displays the Command Window with the following code and output:

```
>> a = rand(3,3)

a =

    0.8147    0.9134    0.2785
    0.9058    0.6324    0.5469
    0.1270    0.0975    0.9575

>> b = rand(3,3)

b =

    0.9649    0.9572    0.1419
    0.1576    0.4854    0.4218
    0.9706    0.0003    0.9157

>> c = a+b

c =

    1.7796    1.0705    0.4204
    1.0634    1.1177    0.9686
    1.0976    0.0978    1.8732
```

The Workspace window on the right shows the following variables and their values:

Name	Value
a	[0.8147, 0.9134, 0.2785; ...]
ans	6
b	[0.9649, 0.9572, 0.1419; ...]
c	[1.7796, 1.8705, 0.4204; ...]
h	10
i	3
j	3
m	5
M	9
n	3
r	10
res	[0.3018; -0.0473; -0.455; ...]
SA	1.2566e+03
x	3
y	3

The Command Window also displays a message: "New to MATLAB? See resources for [Getting Started](#)."

Question 7

The image shows the MATLAB R2018a - academic use interface. The main window displays a script titled 'Untitled11.m' with the following code:

```
1 e = exp(1);  
2 E = 0;  
3 for i=1:7  
4     E = E + 1/factorial(i);  
5 end
```

The Command Window shows the execution results:

```
>> Untitled11  
>> e  
e =  
2.7183  
  
>> E  
E =  
1.7183
```

The Workspace window shows the following variables:

Name	Value
a	[0.8147, 0.9134, 0.2785, ...]
ans	6
b	[0.9649, 0.9572, 0.1419, ...]
c	[1.7796, 1.8705, 0.4204, ...]
e	2.7183
E	1.7183
h	10
i	7
j	3
m	5
M	9
n	3
r	10
res	[0.3018; -0.0473; -0.455; ...]
SA	1.2566e+03
x	3
y	3

The Command Window also displays a message: "New to MATLAB? See resources for [Getting Started](#)."

Question 8

The image shows the MATLAB R2018a - academic use interface. The main window displays the Command Window with the following code and output:

```
>> x = [3 1 5 7 9 2 6];  
x(3)  
x(1:7)  
x(1 : end)  
x(1 : end-1)  
x(6:-2:1)  
x([1 6 2 1 1])  
sum(x)  
  
ans =  
5  
  
ans =  
3 1 5 7 9 2 6  
  
ans =  
3 1 5 7 9 2 6  
  
ans =  
3 1 5 7 9 2  
  
ans =  
2 7 1  
  
ans =  
3 2 1 3 3  
  
ans =  
33
```

The Workspace window on the right shows the following variables:

Name	Value
a	[1.2131, 0.7533, 0.3313, ...]
A	3x4 double
ans	33
avg	[1.0265, -0.0674, -0.215...
b	[0.9649, 0.9572, 0.1419; ...]
c	[1.7796, 1.8705, 0.4204; ...]
e	2.7183
E	1.7183
F	5x10 double
h	10
i	7
j	3
m	5
M	9
n	3
r	10
res	[0.3018, -0.0473, -0.495...
s	[1.2131, 0.7533, 0.3313, ...]
SA	1.2566e+03
scores	[1.0265, -0.0674, -0.215...
se	[1.2019, 0.8819, 2.5166]
tscores	1x10 logical
x	[3, 1, 5, 7, 9, 2, 6]
x1	[2, 4, 1]
y	[2, 1, 3]

The bottom status bar shows the system clock as 05:03 PM on 28-08-2020.

Question 9

The image shows the MATLAB R2018a - academic use interface. The Command Window displays the following code and output:

```
>> x1 = A(1, :)

x1 =

     2     4     1

>> y = A([2,3], :)

y =

     6     7     2
     3     5     9

>> s = sum(A)

s =

    11    16    12

>> s = sum(A')

s =

     7    15    17

>> se = [std(A(:,1)), std(A(:,2)), std(A(:,3))]./sqrt(3)

se =

    1.2019    0.8819    2.5166

f2 >>
```

The Workspace window shows the following variables:

Name	Value
a	4x3 double
A	[2,4,1;6,7,2;3,5,9]
ans	[3,2,1,3,3]
b	[0.9649,0.9572,0.1419;...
c	[1.7795,1.8705,0.4204;...
e	2.7183
E	1.7183
h	10
i	7
j	3
m	5
M	9
n	3
r	10
res	[0.3018;-0.0473;-0.455...
s	[7,15,17]
SA	1.2366e+03
se	[1.2019,0.8819,2.5166]
x	[3,1,5,7,9,2,6]
x1	[2,4,1]
y	[6,7,2;3,5,9]

The Windows taskbar at the bottom shows the system clock as 03:55 PM on 28-08-2020.

Question 10

The image shows the MATLAB R2018a - academic use interface. The main window displays a script with the following code and output:

```

>> x + y

ans =

     3     5    13

>> x + A

ans =

     4     5    14
     6     6    15

>> x' + y

ans =

     3     2     6
     6     5     9
    10     9    13

>> A - [x' y']
Matrix dimensions must agree.

>> [x;y']
Error using vertcat
Dimensions of arrays being concatenated are not consistent.

>> [x;y]

ans =

     1     4     8
     2     1     5

>> A - 3

ans =

     0    -2     3
     2    -1     4
  
```

The Command Window shows the following messages:

- New to MATLAB? See resources for [Getting Started](#).
- Matrix dimensions must agree.
- Error using `vertcat`
- Dimensions of arrays being concatenated are not consistent.

The Workspace window shows the following variables:

Name	Value
a	4x3 double
A	[3,1,6;5,2,7]
ans	[0,-2,3;-1,4]
b	[0.9649,0.9572,0.1419;...
c	[1.7795,1.8705,0.4204;...
e	2.7183
E	1.7183
h	10
i	7
j	3
m	5
M	9
n	3
r	10
res	[0.3018;-0.0473;-0.455...
s	[7,15,17]
SA	1.2366e+03
se	[1.2019,0.8819,2.5166]
x	[1,4,8]
x1	[2,4,1]
y	[2,1,5]

The Current Folder window shows the following files:

- Add-in Express
- Adobe
- Animotica
- assignment
- Autodesk Application Manager
- Blackmagic Design
- cache
- CPY_SAVES
- Cslab1
- Custom Office Templates
- Downloads
- FlightGear
- Inventor Server SDK ACAD 2015
- Java
- LispiceXVII
- MATLAB
- NctBeansProjects
- Processing
- Visual Studio 2017
- WB Games
- Zoom
- !ghlogs.doc
- OSBitTorrent.pdf
- 10836b46b0dbecf38e56d32a55ed4d16_easy-simple-drawings-fr...
- banner.xd
- cc_20200111_160535.reg
- ccd1.png
- ccd5.png
- Ch-12.docx
- chaos.cpp
- Dark Web and Drugs.docx
- desktop.ini
- DONT OPEN.txt
- fig.txt
- java sites.txt

The Details window shows the following information:

Select a file to view details

Question 12

The image shows the MATLAB R2018a - academic use interface. The main window displays the Command Window with the following code and output:

```
>> randn('seed',123456789)
>> F = randn(5,10);
>> avg = sum(F)/5

avg =

Columns 1 through 6

    1.0265    -0.0674    -0.2153    -0.1415    -0.3151    0.3403

Columns 7 through 10

   -0.6386   -0.3431    0.1726    0.3760

>> s = std(F)

s =

Columns 1 through 6

    1.2131    0.7533    0.3313    0.5499    0.7748    0.9208

Columns 7 through 10

    1.1053    1.0867    0.6738    0.9204

>> ttest(F)

ans =

     0     0     0     0     0     0     0     0     0     0

f1 >>
```

The Workspace window on the right shows the following variables:

Name	Value
a	[1.2131, 0.7533, 0.3313, ...]
A	3x4 double
ans	[0, 0, 0, 0, 0, 0, 0]
avg	[1.0265, -0.0674, -0.2153, ...]
b	[0.9649, 0.9572, 0.1419, ...]
c	[1.7796, 1.8705, 0.4204, ...]
e	2.7183
E	1.7183
F	5x10 double
h	10
i	7
j	3
m	5
M	9
n	3
r	10
res	[0.3018, -0.0473, -0.495, ...]
s	[1.2131, 0.7533, 0.3313, ...]
SA	1.2566e+03
scores	[1.0265, -0.0674, -0.2153, ...]
se	[1.2019, 0.8819, 2.5166]
tscores	1x10 logical
x	[1, 8, 3, 9, 0, 1]
x1	[2, 1, 1]
y	[2, 1, 5]

The bottom status bar shows the system clock as 04:57 PM on 28-08-2020.

Question 13

The image shows the MATLAB R2018a - academic use interface. The main window displays the Command Window with the following code and output:

```
>> x = [1 8 3 9 0 1]

x =

     1     8     3     9     0     1

>> sum(x)

ans =

    22

>> cumsum(x)

ans =

     1     9    12    21    21    22

>> sin(x)

ans =

    0.8415    0.9894    0.1411    0.9121     0     0.8415
```

The Workspace window on the right shows the following variables:

Name	Value
a	[1.2131, 0.7533, 0.3313, ...]
A	3x4 double
ans	[0.8415, 0.9894, 0.1411, ...]
avg	[1.0265, -0.0674, -0.215, ...]
b	[0.9649, 0.9572, 0.1419, ...]
c	[1.7796, 1.8705, 0.4204, ...]
e	2.7183
E	1.7183
F	5x10 double
h	10
i	7
j	3
m	5
M	9
n	3
r	10
res	[0.3018, -0.0473, -0.495, ...]
s	[1.2131, 0.7533, 0.3313, ...]
SA	1.2566e+03
scores	[1.0265, -0.0674, -0.215, ...]
se	[1.2019, 0.8819, 2.5166]
tscores	1x10 logical
x	[1, 8, 3, 9, 0, 1]
x1	[2, 4, 1]
y	[2, 1, 5]

The bottom status bar shows the system clock as 04:59 PM on 28-08-2020.