2. Assume that the code shown below has been executed:

```
begin code
>> A = [ 9, 0, 6, 8, 3, 0];
end code
```

Write the output that the following commands will produce. Do not worry about the exact format of the output. If the result produces a MATLAB error, write "ERROR."

(a) \[ >> A(3) \]
\[
\text{ans} =
\]

(b) \[ >> A(3) >= 0 \]
\[
\text{ans} =
\]

(c) \[ >> A([1,3,5]) \]
\[
\text{ans} =
\]

(d) \[ >> A([2,4,6]) \]
\[
\text{ans} =
\]

(e) \[ >> A([1,3,5]) / 3 + 1 \]
\[
\text{ans} =
\]

(f) \[ >> A([1,3,5]) >= 6 \]
\[
\text{ans} =
\]

(g) \[ >> A([1,3,5]) .* A([2,4,6]) \]
\[
\text{ans} =
\]

(h) \[ >> A([1,3,5]) + A([2,4,6]) ./ A([2,4,6]) \]
\[
\text{ans} =
\]
1. What is the output when the following commands are typed in sequence from the MATLAB command window? Do not worry about the exact format of the output.

(a) >> 4 * 2 / 2 ^ 2 + 1

    ans =

(b) >> 4 * 2 / 2 ^ (2 + 1)

    ans =

(c) >> 6 * 2 / 2 < 2 + 1

    ans =

(d) >> [6 2] / 2 < 2 + 1

    ans =

(e) >> [6 2] / 2 .^ 2 + 1

    ans =
3. Assume that the 2D array:

\[
A = \begin{bmatrix}
1 & 6 & -9 \\
2 & 7 & 0 \\
4 & 3 & 9 \\
-3 & -2 & -7
\end{bmatrix}
\]

has been defined, i.e.

```matlab
>> A = [1 6 -9; 2 7 0; 4 3 9; -3 -2 -7];
```

Write the output that the following commands will produce. Do not worry about the exact format of the output. If the result produces a MATLAB error, write "ERROR."

(a) `>> A(4,3)`

    \[
    \text{ans} =
    \]

(b) `>> A(3,4)`

    \[
    \text{ans} =
    \]

(c) `>> A(9)`

    \[
    \text{ans} =
    \]

(d) `>> A(:,3)`

    \[
    \text{ans} =
    \]

(e) `>> A(1:2, 2:3)`

    \[
    \text{ans} =
    \]

(f) `>> A(1, end-1:end)`

    \[
    \text{ans} =
    \]

(g) `>> A([1,4],[1,3]) < 1`

    \[
    \text{ans} =
    \]
4. Suppose that a row vector \( r \) of unknown length has been defined. Write matlab code (no more than 2 lines) that will reverse the order of the elements of the vector. For example,

- if \( r \) was generated using the matlab code

\[
>> r = [1 \ -4 \ 3];
\]

your code should return

\[
3 \ -4 \ 1
\]

---

begin code

---

drag code

---

end code

---
5. Write, in the code box shown below a function ReplaceChar, which will replace all occurrences of one character in a string by another character.

The function ReplaceChar should have three input arguments:

- the input string,
- the character to be replaced,
- the replacing character,

and one output argument:

- the modified string.

Below is an example of how ReplaceChar should work when it is used in the command window:

```matlab
>> st1 = ReplaceChar('this is a test','t','T')
   st1 =
      This is a TesT

begin code

end code
```
6. Let A, C, D, E, and F be defined as in the following MATLAB script.

```matlab
begin code
  >> clear
  >> A = {'Golden', 'Bears', [3, 1; 4, 2]};
  >> C.f = {7};
  >> D.f = 88;
  >> E = [C D];
  >> F = {{12 5} A E};
end code
```

Write the output that the following commands will produce. Do not worry about the exact format of the output. If the result produces a MATLAB error, write "ERROR."

(a) `size(A{1})`

```
ans =
```

(b) `size(A{2})`

```
ans =
```

(c) `A{2}{1} == 'e'`

```
ans =
```

(d) `size(A{1:2})`

```
ans =
```

(e) `{A{2}{1} F{2}{1}}`

```
ans =
```

(f) Write an expression that extracts the number 88 from the variable F.
7. Consider the following lines of code:

```plaintext
begin code
>> clear  
>> schools(1).SchoolName = 'Cal';  
>> schools(1).TeamName = 'Golden Bears';  
>> schools(2).SchoolName = 'UCLA';  
>> schools(2).TeamName = 'Bruins';  
>> schools(3).SchoolName = 'Stanford';  
>> schools(3).TeamName = 'Cardinal';  
>> schools(4).SchoolName = 'USC';  
>> schools(4).TeamName = 'Trojans';
end code
```

(a) What size is schools?

(b) What is the class of schools?

(c) How many fields does schools have?

Define B and C as

```plaintext
begin code
>> B = [schools.SchoolName];  
>> C = {schools.TeamName};
end code
```

(d) What size is B?

(e) What size is C?

(f) What class is B?

(g) What is the value of B(6:9)?

(h) What is the value of C{3}?
(i) By direct assignment, add a field, named location, to schools. The values should be character strings, using LosAngeles (for USC), Westwood (for UCLA), Berkeley (for Cal), and ShallowAlto (for Stanford). Show your code below.

```