Homework Quiz 4

Due 20 Oct at 6:00 **Points** 190 **Questions** 19

Available 13 Oct at 6:00 - 20 Oct at 6:00 Time limit None

Instructions

Please go through the questions very carefully in this quiz. You may want to check the codes and commands on Matlab before submitting it.

This quiz was locked 20 Oct at 6:00.

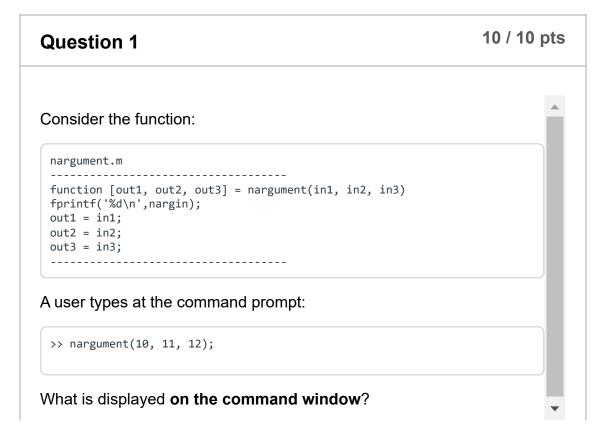
Attempt history

	Attempt	Time	Score
LATEST	Attempt 1	53 minutes	190 out of 190

Score for this quiz: 190 out of 190

Submitted 20 Oct at 4:11

This attempt took 53 minutes.



Error! Not enough input arguments.

Question 2 10 / 10 pts

Consider the function:

Correct!

A user types at the command prompt:

```
>> [x,y] = nargument(1, 2, 3);
```

What is displayed on the command window?

out1 = 1 out2 = 2 nargin not defined 1 2 3 Error! Not enough output arguments. Good job!

```
Question 3

Consider the function:

nargument.m
function [out1, out2, out3] = nargument(in1, in2, in3)
fprintf('%d\n', nargin);
out1 = in1;
out2 = in2;
```

```
out3 = in3;
A user types at the command prompt:
 >> nargument(10, 11, 12, 13);
What is displayed?
    4
    Error! Too many input arguments.
    nargin not defined.
        10
        11
       12
    3
                                                               10 / 10 pts
Question 4
Consider the function:
 nargument.m
 function [out1, out2, out3] = nargument(in1, in2, in3)
 fprintf('%d\n',nargin);
 out1 = in1;
 out2 = in2;
 out3 = in3;
A user types at the command prompt:
 >> nargument(10, 11, 12);
What is the value of the variable nargout when the function is running?
```

Error! Not enough output arguments. 10 / 10 pts **Question 5** The function function ret = test(arg) x = 5y = 10ret = x + y + arg; is defined. The user then types in the command window: >> x = 7; >> y = 12; \Rightarrow arg = 3; >> test(1); What are the values of x and y when execution completes? (Careful!) x = 7, y = 12x = 5, y = 10

Correct!

x and y are undefined	
○ x = 16, y = 16	
○ x = 20, y = 10	
Good job!	
Question 6	10 / 10 pt
<pre>test.m function ret = test(arg) x = 5</pre>	
y = 10 ret = x + y + arg;	
is defined. The user then types in the command window: >> x = 7; >> y = 12; >> arg = 3; >> test(1);	
The user then types in the command window: >> x = 7; >> y = 12; >> arg = 3; >> test(1);	
The user then types in the command window: >> x = 7; >> y = 12; >> arg = 3; >> test(1); What is the value of arg inside the function test?	

Question 7 10 / 10 pts

The function

```
test.m
function ret = test(arg, value1)
x = value1;
y = 10 + x;
ret = x + y + arg;
ret = ret - arg;
```

is defined.

The user then types in the command window:

```
>> x = 7;
>> y = 12;
>> value1 = 1;
>> arg = 3;
>> test(1,x+y)
```

What is the value of ret after the function ends?

ret = 13

Correct!

- ret is undefined
- ret = 48
- ret = 12
- ret = -1

Question 8

10 / 10 pts

The function

```
test.m
```

is defined.

The user then types in the command window:

```
>> value1 = 2;
>> arg = 3;
>> test(arg,value1);
```

What is the value of value1 after the function ends?

Correct!

- value1 = 2
- value1 = 4
- value1 is undefined
- value1 = 9
- value1 = 8

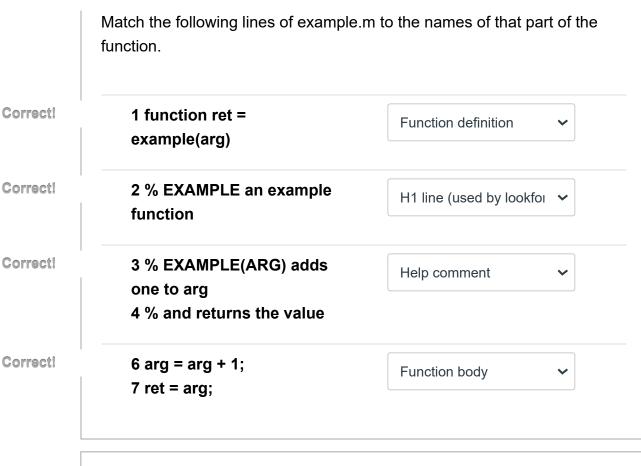
Great job!

Question 9 10 / 10 pts

Consider the function

```
example.m

1 function ret = example(arg)
2 % EXAMPLE an example function
3 % EXAMPLE(ARG) adds one to arg
4 % and returns the value
5
6 arg = arg + 1;
7 ret = arg;
```





Question 11	10 / 10 pts
Which of the following are true statements about the funct	tion error()?

Correct!	May be disabled by the user	
	Works like a special fprintf	
	Preprends the string 'Error: ' to the message	
Correct!	Halts the program	
Correct!	Prints the text in red.	

Question 12 10 / 10 pts

Consider the following function to return the location of the largest element in a matrix:

```
find_max.m
  function maxloc = find <math>max(A)
2 % FIND MAX finds the row and column of the largest element of a matrix
  % maxval = find max(A) returns the row
   % and column, as a two element vector,
   % of the smallest element in matrix A.
7
   maxrow = 1;
8
   maxcol = 2;
9
   for row = 1:size(A,3)
10
    for col = 1:size(A,2)<
11
              if A(row,col) < A(maxrow, maxcol)</pre>
                      maxrow = row;
12
13
                      maxcol = col;
14
              end
15
         end
16 end
17 exit;
```

For line 2, choose the most suitable answer below.

- [This line should stay unaltered]
- [This line should be deleted. It has no purpose.]
- [This line should be moved below line 5]

[This line should be moved above the function definition line]

Question 13 10 / 10 pts

Consider the following function to return the location of the largest element in a matrix:

```
find_max.m
```

```
function maxloc = find <math>max(A)
  % FIND MAX finds the row and column of the largest element of a matrix
   % maxval = find_max(A) returns the row
   % and column, as a two element vector,
   % of the smallest element in matrix A.
7
   maxrow = 1;
8
   maxcol = 2;
    for row = 1:size(A,3)
9
10
        for col = 1:size(A, 2)
11
              if A(row,col) < A(maxrow, maxcol)</pre>
12
                      maxrow = row;
13
                      maxcol = col;
14
              end
15
         end
16 end
17 exit;
```

For lines 3-5, choose the most suitable answer below.

- [These lines should be deleted. They have no purpose.]
- [These lines should stay unaltered]
- [These lines should be moved above the function definition line]

Question 14 10 / 10 pts

Consider the following function to return the location of the largest element in a matrix:

```
find max.m
1 function maxloc = find max(A)
2 % FIND_MAX finds the row and column of the largest element of a matrix
3 % maxval = find_max(A) returns the row
4 % and column, as a two element vector,
  % of the smallest element in matrix A.
6
7
   maxrow = 1;
   maxcol = 2;
8
9
   for row = 1:size(A,3)
   for col = 1:size(A,2)
if A(row,col) <
10
11
             if A(row,col) < A(maxrow, maxcol)</pre>
12
                     maxrow = row;
13
                     maxcol = col;
             end
14
15
       end
16 end
17 exit;
```

For line 9, choose a line below that should replace this line.

Correct!

```
9 for row = 1:size(A,1)

9 for row = 1:size(A,2)

9 for row = 1:length(A)

[This line should stay unaltered]
```

Question 15 10 / 10 pts

Consider the following function to return the location of the largest element in a matrix:

```
find_max.m
1
    function maxloc = find max(A)
   % FIND MAX finds the row and column of the largest element of a matrix
2
3
   % maxval = find max(A) returns the row
   % and column, as a two element vector,
   % of the smallest element in matrix A.
6
7
   maxrow = 1;
8
   maxcol = 2;
9
   for row = 1:size(A,3)
10
      for col = 1:size(A,2)
             if A(row,col) < A(maxrow, maxcol)</pre>
11
12
                      maxrow = row;
                      maxcol = col;
13
14
              end
15
        end
16 end
17 exit;
```

For line 11, choose a line below that should replace this line.

```
11 if A(maxrow,maxcol) > A(row,col)
```

[This line should stay unaltered]

```
11 if A(col,row) > A(maxcol,maxrow)
```

```
11 if A(row,col) <= A(maxrow,maxcol)
```

Correct!

```
11 if A(row,col) > A(maxrow,maxcol)
```

Question 16 10 / 10 pts

Consider the following function to return the location of the largest element in a matrix:

```
% and column, as a two element vector,
5
    \% of the smallest element in matrix \ensuremath{\mathsf{A}}.
6
7
    maxrow = 1;
8
    maxcol = 2;
9
    for row = 1:size(A,3)
10
         for col = 1:size(A,2)
                if A(row,col) < A(maxrow, maxcol)</pre>
11
12
                         maxrow = row;
13
                         maxcol = col;
14
                end
15
          end
16 end
17
    exit;
```

For line 17, choose a line below that should replace this line.

17 quit;

Correct!

- 17 maxloc = [maxrow,maxcol];
- 17 maxloc = A(maxcol,maxrow);
- 17 return;
- 17 return [maxrow,maxcol];
- [This line should stay unaltered]

Question 17 10 / 10 pts

Select all MATLAB functions that would return the location of the largest element in a matrix.

```
function maxloc = find_max(A)
[maxrow,maxcol] = find(A == max(A));
maxloc = [maxrow,maxcol];
```

Correct!

```
function maxloc = find_max(A)
max_ind = 1;
B = A(:);
for i = 1:size(B,1)
    if A(i) > A(max_ind)
        max_ind = i;
    end
end

maxrow = mod((max_ind - 1),size(A,1)) + 1;
maxcol = floor((max_ind - 1)/size(A,1)) + 1;
maxloc = [maxrow,maxcol];
```

Correct!

```
function maxloc = find_max(A)
[maxrow,maxcol] = find(A == max(max(A)),1,'first');
maxloc = [maxrow,maxcol]
```

```
function maxloc = find_max(A)
for i = 1:size(A,1)
    maxrow = max(A(:,i));
    maxcol = max(A(i,:));
end
maxloc = [maxrow,maxcol];
```

Question 18

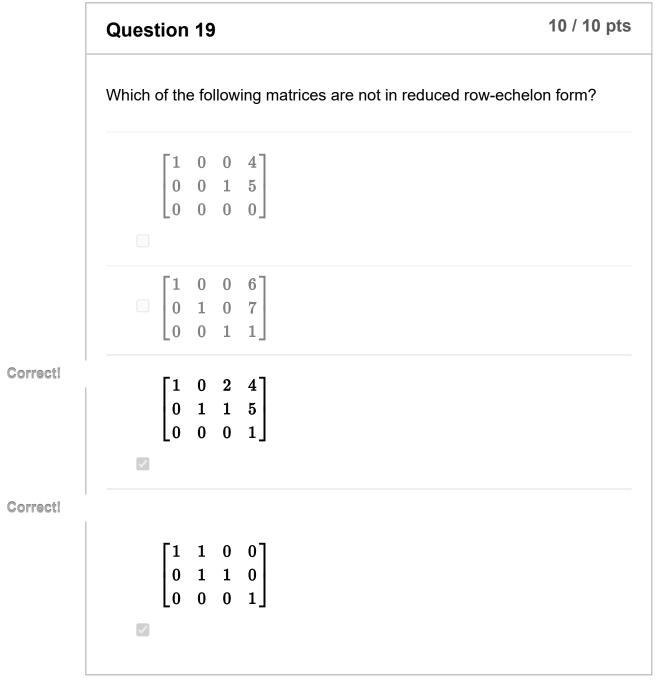
10 / 10 pts

How many leading 1's can a reduced row-echelon form of a 3 by 4 matrix have?

- Must have 4
- May have 1, 2, or 3
- Must have 3
- May have 0, 1, 2, 3, or 4

Correct!

May have 0, 1, 2, or 3



Quiz score: 190 out of 190