

**Exam 1 -- Written Portion**

**NAME** \_\_\_\_\_

**SECTION NUMBER** \_\_\_\_\_

**CAMPUS MAILBOX NUMBER** \_\_\_\_\_

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<b>Multiple Choice</b>	<u>                    </u> <b>/40</b>
<b>Coding Problem</b>	<u>                    </u> <b>/60</b>
<b>Total</b>	<u>                    </u> <b>/100</b>

## All multiple choice problems have equal weight

### PROBLEM 1

Select the single fprintf statement that will print the matrix  $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 4 & 3 & 2 & 1 \\ 3 & 4 & 1 & 2 \\ 2 & 1 & 4 & 3 \end{bmatrix}$  in the Matlab command window as

1      4

3      2

2      3

4      1

3      2

1      4

4      1

2      3

a. fprintf('%2i      %2i      %2i      %2i \n',A')

b. fprintf('%2i      %2i \n',A)

c. fprintf('%2i      %2i \n',A')

d. fprintf('%2i      %2i      %2i \n',A)

e. fprintf('%2i      %2i \n',A')

f. fprintf('%2i      %2i \n',A)

g. other \_\_\_\_\_

### PROBLEM 2

What is the value of y(3) at the end of this snippet of code?

```
y(1) = 1;
for i = 2:4
    y(i) = y(i-1) + i;
end
y(3)
```

a. 1

b. 3

c. 6

d. 10

e. other \_\_\_\_\_

**PROBLEM 3**

What is the size of A at the end of this snippet of code?

```
A(1,1) = 10;  
for i = 1:3  
    for j = 3:5  
        A(i,j) = i + j;  
    end  
end
```

- a. 5 columns and 3 rows
- b. 3 columns and 5 rows
- c. 3 columns and 3 rows
- d. 2 columns and 3 rows
- e. other \_\_\_\_\_

**PROBLEM 4**

What is the value of a at the end of this program?

```
a=6;  
b=7;  
if (a>6)|(b==7)  
    a=a+1;  
end
```

- a. 6
- b. 7
- c. 8
- d. other

**PROBLEM 5**

What is the value of fred at the end of this program?

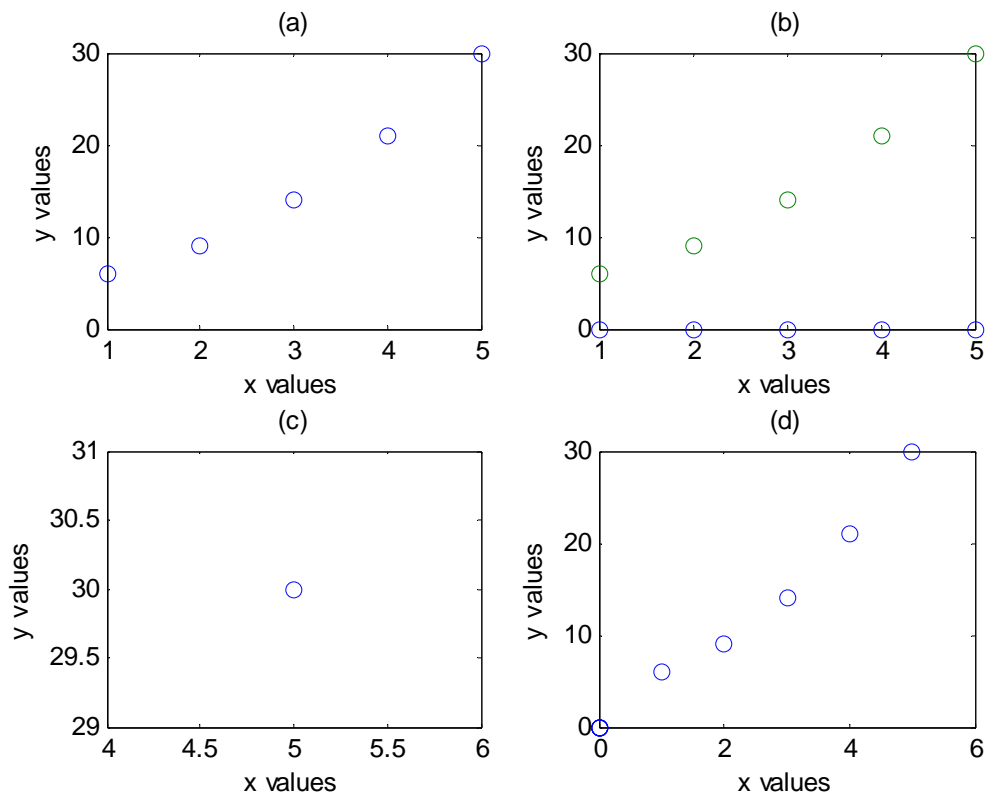
```
fred=3;  
for i=1:2:3  
    fred=fred-i;  
end
```

- a. 0
- b. 1
- c. 2
- d. 3
- e. other \_\_\_\_\_

**PROBLEM 6**

Which plot does the following segment of code produce?

```
for count = 1:5
    x(1,count) = count;
    y(2,count) = count^2 + 5;
end
plot(x,y,'o')
```



e. other \_\_\_\_\_

**PROBLEM 7**

What is the third column of `gain` resulting from the code segment if `investment` is defined as given below?

```
investment=[ 3.4   5.1   6.7 10.4   6.3   3.5   1.4   2.3   0.7   9.5 12.1   4.4 ;  
           -2.3 -15.0 -0.9 -5.4 -3.2 -7.5 -9.8 -11.5 -1.2 -6.8 -3.4 -4.4 ]
```

```
k = 2;
```

```
for year = 1:3:12
```

```
    gain(1,k) = investment(1,year);
```

```
    loss(1,k) = investment(2,year);
```

```
    k = k + 1;
```

```
end
```

- a. 3.4
- b. 6.7
- c. -9.8
- d. 10.4
- e. 6.3
- f. 3.5
- g. 1.4
- h. 2.3
- i. -0.9
- j. other \_\_\_\_\_

**PROBLEM 8**

What is the value of `b` at the end of this program?

```
A=[1;2;3];
```

```
row=0;
```

```
for j=1:2:3
```

```
    row=row+1;
```

```
    b(row,1)=A(j,1);
```

```
end
```

- a. `b=[1 ; 2; 3]`
- b. `b=[1; 3]`
- c. `b=[1; 0; 3]`
- d. other \_\_\_\_\_

**PROBLEM 9**

Which columns of `investment` are accessed by the code segment given below?

```
investment=[ 3.4   5.1   6.7 10.4   6.3   3.4   1.4   2.3   0.7   9.5 12.1   4.4 ;  
            -2.3 -15.0 -0.9 -5.4  -3.2 -7.5  -9.8 -11.5 -1.2 -6.8 -3.4 -4.4 ]
```

```
k = 2;
```

```
for year = 1:3:12
```

```
    gain(1,k) = investment(1,year);
```

```
    loss(1,k) = investment(2,year);
```

```
    k = k + 1;
```

```
end
```

- a. 1, 3, 6, 9, 12
- b. 1, 4, 7, 10, 13
- c. 1, 4, 7, 10
- d. 3, 6, 9, 12
- e. 4, 7, 10
- f. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
- g. other \_\_\_\_\_

**PROBLEM 10**

When we run this scrap of code, the red message in the command window says:

??? Subscript indices must either be real positive integers or logicals.

```
x(1,1) = 1;  
i = 0;  
for year = 10:75  
    x(i,1) = year^2+4;  
    i = i + 1;  
end
```

Mark the changes to this code so that it will run without the error message in the command window.