

## Quiz 1

100 points (10 points per problem)  
(Version A)

### Problem 1

For each case below, write the MATLAB code for indexing into the variable 'X' that would produce the result.

X =

22	49	72	68	71	54	49
75	97	67	40	82	4	95
97	83	69	68	67	72	3
33	21	54	11	26	45	81
6	5	11	32	23	18	73

ans =

22	49	72	68	71	54	49
----	----	----	----	----	----	----

ans =

32

ans =

49  
97  
83  
21  
5

ans =

83	69	68	67	72
----	----	----	----	----

ans =

97	67
83	69

**Problem 2** Fill in the missing code needed to generate the output below

```
clear
Cnt=0

while Cnt
    Cnt=Cnt+1;

    fprintf('          %d      ', Cnt, Total)
end
```

```
Current: 1 Total: 1
Current: 2 Total: 3
Current: 3 Total: 6
Current: 4 Total: 10
Current: 5 Total: 15
```

### Problem 3

Write code that uses a 'for' loop to count how many integers between 1 and 20 can be divided by 3 with no remainder (e.g. the number '9').

### Problem 4

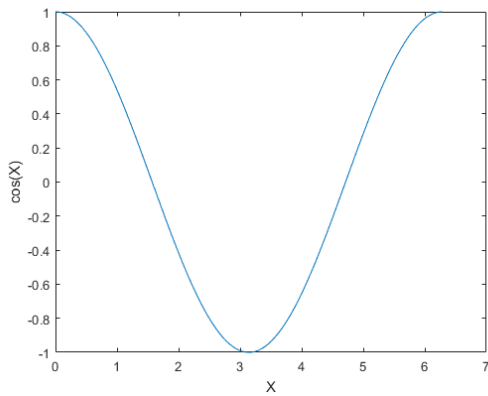
In general, which numerical integration method would give the most accurate result- Simpson's rule, Trapezoid, or MidPoint?

Fill in the missing code within the 'for' loop for the MidPoint method

```
NI nterval = 100;
EndPoi nts = linspace(A, B, NI nterval +1);
Del taX = EndPoi nts(2) - EndPoi nts(1);
Mi dPoi nts = EndPoi nts(1: end- 1) +Del taX/2;
F=@(x) cos(x)
IntResul t=0;
IntResul tArray=zeros(NI nterval , 1);
for nn=1: NI nterval
    Area =
        IntResul t = IntResul t +Area;
IntResul tArray(nn)=IntResul t;
end
```

### Problem 5

Write all the code needed to generate the plot below.



### Problem 6

Write code that would generate an anonymous function that squares (element-wise) its input.

Write code for an m-file function that would perform the same operation.

### Problem 7

What are the outputs of the following commands:

```
A=linspace(1, 3, 3)
```

```
B=(0:2:6)
```

```
[C D]=meshgrid( (1:2), (2:4) )
```

### Problem 8

Give the output of the following code:

```
X=(1:10)
for ii=1:10
    if ii>7
        X(ii:end)
    end
end
```

### Problem 9

Give the output of the following code:

```
N=5;
M=zeros(N,1);
for nn=1:N-3
    M(nn)=nn^2;
end
sum(M(M>0))
```

### Problem 10

Write code using a 'switch-case' structure that performs identically to:

```
if X==1
    fprintf(' X=1\n')
elseif X==2
    fprintf(' X=2\n')
else
    fprintf(' Invalid X\n')
end
```