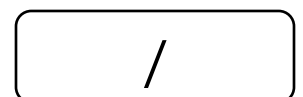


..... الاسم: ..... رقم القيد: ..... المجموعة: .....

Q1: (5 Marks) Convert the following Mathematical expressions into MATLAB expressions?

Mathematical Expression	MATLAB Expression
$\ln 3x^2$	
$\cos^{-1}(\pi x)$	
$\frac{ 2x - 1 }{5x!}$	
$5\sqrt{2} e^{-5i}$	
$10 \geq 5 \ \& \ 15 \neq 7$	
$x = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$	
$y = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	
$\sum_{a=0}^{10} a$	
$\frac{d}{dx} x \cdot \sin(2\pi x)$	
$\int_{-\pi}^{\pi} x \cdot \cos\left(x + \frac{\pi}{2}\right) dx$	



Q2: (5 Marks) Which of the following statements is not valid in MATLAB?

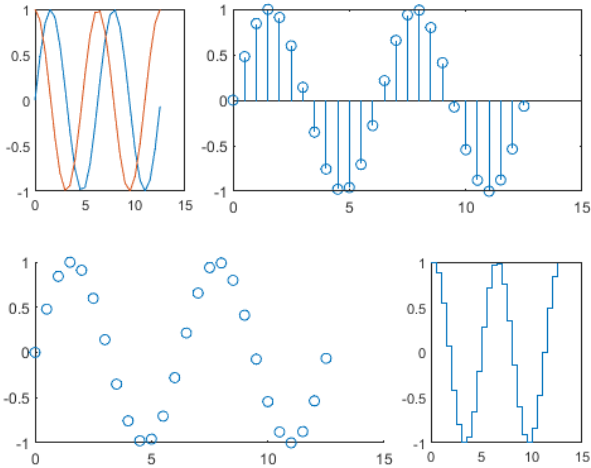
- `clear; y=[2 4 5]; x=[2 ; 2; 2]; y*x` ( )
- `A=[4 , 2 , 1]; B=[1 , -1 , 3]; C=cross(A,B)` ( )
- `f=@(x,y)x^2; f([2 ; 4])` ( )
- `x=[2 4 6; 3 5 7]; reshape(x,3,2)` ( )
- `y=[2 4]; x=[2;2]; y.^x` ( )
- `A=[4 -2 1; 1 1 5; -2 3 -1]; b=[7;10;2]; rref([A ; b])` ( )
- `g=[1,2,3;4,5,6]; h=[2;2;2]'; k=[g;h]` ( )
- `x=[pi ; 2*pi ; 3*pi]; x^(3^2)` ( )
- `sym x,y; diff(x^2 + y^2,y)` ( )
- `x1=[5 5 5]; x2=[8 8 8]; x=[2 * x1 ; x2 - 8]` ( )

..... الاسم: ..... رقم القيد: ..... المجموعة: .....

**Q3: (5 Marks)** Evaluate the following MATLAB statements:

<code>linspace(1,10,10)</code>	
<code>ones(2,4)</code>	
<code>zeros(1,3)</code>	
<code>w=[1 2 ; 3 4 ]; length(w)</code>	
<code>x=[2 4 ;6 8]; x(end-1,2)</code>	
<code>a=[1 2 3 4]; max(a)+min(4*a)</code>	
<code>s=[1 2 3 4 ; 5 6 7 8]; s(:,3)</code>	
<code>x=[2 4 ;6 8]; x(2:4)</code>	
<pre> k= 0; while k^0.5 &lt; k     k = k + 1; end k </pre>	
<pre> for i=5:-1:0     for j= 0:i         fprintf('%d ', j)     end     fprintf('\n') end </pre>	

Q4. A) : (2 Marks) Write a MATLAB code to get the following:



```
clear; close all; clc
t = 0:0.5:4*pi;
figure(1)
```

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Q4. B) : (3 Marks) Rewrite the following MATLAB codes without affecting the output:

<pre>if w &lt; x     if w &gt; y         w = x*y     end end</pre>	<p>% Rewrite using <i>single if statement</i></p> <p>.....</p> <p>.....</p> <p>.....</p>
<pre>for m = 0:10     fprintf('2 x %d = %d\n', m, m*2) end</pre>	<p>% Rewrite using <i>disp()</i></p> <p>.....</p> <p>.....</p> <p>.....</p>