1. Given the following array \( a \),

\[
a = \begin{bmatrix}
3 & 7 & 6 & 4 \\
9 & 4 & 10 & 2 \\
1 & 8 & 3 & 5
\end{bmatrix}
\]

determine the result of each of the following commands.

```
>> a(4, 3)
>> a(3, 1)
>> a(0, 2)
>> a(5)
>> a'
>> a([2 3], [3 4])
>> a([2 1], [2 3])
>> a(3:-1:1, 4:-1:1)
>> a([2 2], :)
>> a(end, 2)
>> max(a)
>> a(:)
>>> b = a; b([1 3],[2 4]) = [-1 -2; -3 -4]; b
>>> b = a; b(:,2) = [];
>> a > 5
```
3. What is the result of the following commands?

```matlab
>> a = [2 1 3];
>> b = [-1 -2 -3];
>> conv(a,b)
```

4. Write a MATLAB code fragment to generate the following figure, including axis labels, and title.

5. Write a MATLAB code fragment to generate the following figure, including axis labels, and title.
6. Suppose a system is implemented with the difference equation:

\[ y(n) = x(n) + 2 x(n - 1) + 1.5 x(n - 2) - 0.95 y(n - 1) - 0.1 y(n - 2) \]

Write your own Matlab function, `mydiffeq`, to implement this difference equation using a `for` loop. If the input signal is \(N\)-samples long (\(0 \leq n \leq N - 1\)), your program should find the first \(N\) sample of the output \(y(n)\) (\(0 \leq n \leq N - 1\)).

Use the initial conditions,

\[
\begin{align*}
    x(-1) &= 1.1, & x(-2) &= 0.5 \\
    y(-1) &= 0 - 0.3, & y(-2) &= 0.2
\end{align*}
\]