MATLAB (**MAT**rix **LAB**oratory) for Absolute Beginners *

1 Defining Variables & Basic Arithmetic

To create a variable, use the = operator.

```
% Define variables
a = 10;
b = 3;
c = a + b    % The result (13) will display in the Command Window
```

Pro Tip: A semicolon (;) at the end of a line performs the calculation but hides the output from the screen.

2 Creating Matrices

Matrices are the building blocks of MATLAB. Use **square brackets** to define them:

- Use **spaces** to separate numbers in a row.
- Use **semicolons** to start a new row.

```
% Create a 2x2 matrix
A = [1 2; 3 4]
B = [5 6; 7 8]
```

3 Matrix Multiplication

In MATLAB, the * operator performs standard linear algebra matrix multiplication (row-by-column).

$$C = A \times B$$

```
% Standard matrix multiplication
C = A * B
```

4 Matrix Inverses & Transpose

You can easily manipulate matrices using built-in functions:

```
% Calculate the Inverse of A
A_inv = inv(A)

% Calculate the Transpose of A (swap rows and columns)
A_transpose = A'
```

5 Summary Checklist

Task	MATLAB Command
Assign a Variable	`x = 5`
Create a Matrix	`A = [1, 2; 3, 4]`
Create a Column Vector	`v = [1; 2; 3]`
Matrix Multiplication	`A * B`
Find Inverse	`inv(A)`
Transpose	`A'`

*Created with the assistance of Google Gemini.