# MATLAB 1 – Team

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| --- | --- | --- | --- |
| **Course** | **ENGR 13300** | **Semester** | */eg. Fall 2024/* |
| **Assignment Name** | */eg. HW3 EX3 Team #2/* | **Section** | */eg. LC1/* |
| **Student 1 Name** |  | **Student 3 Name** |  |
| **Student 1 Purdue login** |  | **Student 3 Purdue login** |  |
| **Student 2 Name** |  | **Student 4 Name** |  |
| **Student 2 Purdue login** |  | **Student 4 Purdue login** |  |
| **List collaborators if any (Name, Purdue login)** |  | | |

## Task #1 Reflection

## Task #2 Part A

|  |  |  |
| --- | --- | --- |
| **Equation** | **MATLAB Result** | **Python Result** |
| A = 25 |  |  |
| B = A ^ 2 |  |  |
| C = B – A \* 7 / 8 |  |  |
| D = 17 // 3 + 23 / 7 |  |  |
| E = 4 ^ (5 \* 7) |  |  |
| F = -4 ^ (6 / 11) |  |  |
| M = 4 ^ (i / 2) |  |  |
| Z = 179 % 20 |  |  |
| P = exp(2 \* pi) |  |  |

1. What occurs when entering equation D? What is the difference in the use of operator for Equation D in MATLAB and Python?
2. In equation M, how does “I” function in MATLAB? Is it possible to use the letter “I” as a variable?
3. Why does equation Z cause a problem in MATLAB? How would you find a command or a function in MATLAB to compute the modulus?
4. How do you calculate the natural logarithm of a value in MATLAB? How do you call the base of the natural logarithm, e, in MATLAB?

## Task #2 Part B

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | **Arguments Required** | **Appropriate Syntax** | **Special Units** | **Purpose** |
| sin | Value in radians | sin(x) | Radians | Calculates the value of sin |
| exp |  |  |  |  |
| mod |  |  |  |  |
| sqrt |  |  |  |  |
| abs |  |  |  |  |
| pi |  |  |  |  |
| log |  |  |  |  |
| log10 |  |  |  |  |
| acos |  |  |  |  |
| ; (semicolon) |  |  |  |  |
| clc |  |  |  |  |
| clear |  |  |  |  |
| whos |  |  |  |  |
| what |  |  |  |  |
| why |  |  |  |  |
| ans |  |  |  |  |

1. Describe the difference between the fprintf and disp commands.

## Task #2 Part C

|  |  |
| --- | --- |
| **MATLAB Command** | **What did the command do when the script is run?** |
| Bvector = Amatrix(1,:) |  |
| Cvector = Amatrix(2,:) |  |
| Dvector = Amatrix(:,3) |  |
| Evector = sort(Dvector) |  |
| Amatrix(3) = 30; Amatrix |  |
| Fvector = linspace(1,25,4) |  |
| Gvector = Evector\*5 |  |
| Hvector = Amatrix(1:2) |  |
| Ivector = Amatrix(3:6) |  |
| Jmatrix = Amatrix(1:2,2:3) |  |

|  |  |
| --- | --- |
| **The command should...** | **MATLAB Command** |
| Create **Xmatrix** with values identical to **Amatrix** except the second row is **Bvector**. |  |
| Create the **Yvector** by extracting the third row of **Amatrix** |  |
| Extract the element in row 2, column 3 of **Amatrix** and assign it to the variable **z**. |  |
| Replace the value in **Amatrix** row 1, column 1 with the value 55 |  |

## Task #3 Flowchart