

# ENGR 1120 Lecture Chapter 1

## - More Numerical Expressions

- Useful Commands( type in Command Window)

```
>> clear variables
```

```
>> clc
```

- 1.3 - Variables and Assignment

- A variable is a container for storing values in the RAM. The value that is stored has a *type* (1.3.3). We will begin with *floating point* values.

*variable = expression*

– Basic Use of a **Variable**

\* **Assign** a Value

\* **Access** the Value

\* **Re-Assign** a Value

\* Common Errors

- **1.4 - Numerical Expressions**

- We will begin with numerical expressions. This is how we do typical math computations in MATLAB.

- To do this we need to learn about *operator precedence*.

$( \quad )$       Parenthesis

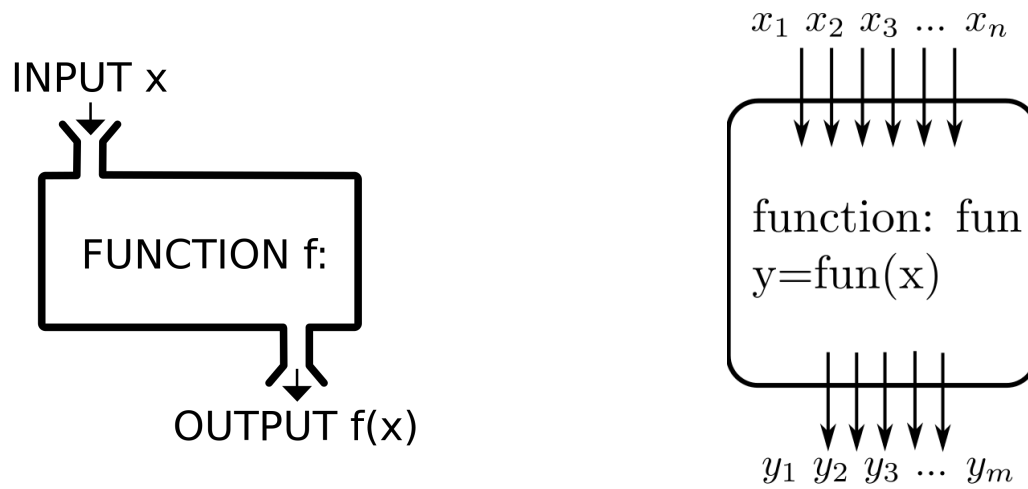
$\wedge$       Exponents

$-$       Negation

$* \quad /$       Multiplication and Division

$+ \quad -$       Addition and Subtraction

- 1.4.3 - Built-In MATLAB functions



– What is a function?

– How do we use a function?

```
>> [y1, y2, ..., ym]=fun (x1, x2, ..., xn)
```

– **Typical Mathematics Functions**

- \* `sqrt()`
- \* `exp()`
- \* `log()`
- \* `log2()`
- \* `log10()`

– **Other Useful Functions**

- \* `round()`
- \* `floor()`
- \* `int8()`
- \* `sign()`
- \* `mod()`
- \* `rem()`

– **The Built in Help**

- \* use the help to get information about the built in functions

\* `>> help sqrt()`

- **1.4.4 - Constants**

- Several useful constants are built into MATLAB.

- \* `pi`

- \* `i`

- \* `j`

- \* `inf`

- \* `NaN`

- **1.4.5 - Random Numbers**

- Sometime it is useful generate random data in MATLAB.

- \* `rand()`

- \* `randi()`

- **1.5 and 1.6 - We will cover after we cover chapter 2**

- Let us solve an example like the lab

- example