

## MATLAB OPERATIONS

Row vectors

$$A = [1, 2, 3, 4]$$

$$A = [1 \ 2 \ 3 \ 4]$$

Column vectors

$$A = [1; 2; 3; 4]$$

Matrices

$$A = [1, 2, 3; 4, 5, 6; 7, 8, 9]$$

## ELEMENTARY MATHS FUNCTIONS

- $\text{sqrt}(x)$
- $\text{nthroot}(x, n)$
- $\text{exp}(x)$
- $\text{abs}(x)$  [Absolute value]
- $\log(x)$
- $\log_{10}(x)$
- $\text{factorial}(x)$
- $\sin(x)$  }  $\rightarrow$  radians
- $\text{sin}(x)$  }  $\rightarrow$  degrees

Same for all trig functions.

- $\text{asin}(x)$  }  $\sin^{-1}(x)$
- $\text{asind}(x)$  }

Same for all inverse trig functions

- $\text{round}(x)$  - rounds to nearest integer
- $\text{fix}(x)$  - removes decimal part
- $\text{ceil}(x)$  - rounds up to nearest integer
- $\text{floor}(x)$  - rounds down to nearest integer

**NOTE:**

Command for cosec:  $\text{csc}(x)$

- $\text{ceil}(x)$  - rounds up to nearest integer
- $\text{floor}(x)$  - rounds down to nearest integer
- $\text{rem}(x,y)$  -  $x \% y$

## DATATYPES

- Integer
- Floating Point Numbers (Decimals)
- Scalar
  - Includes integers, complex nos., floating point nos.
- Character
  - single alphanumeric symbol enclosed in quotes
- String
- Array
  - $\text{zeros}(a,b)$  fn → returns zero  $a \times b$  matrix
  - $\text{eye}()$  fn → returns  $a \times b$  identity matrix
  - $\text{rand}()$  fn → returns  $a \times b$  matrix w/ random values b/w 0 and 1
  - $\text{ones}()$  fn → returns  $a \times b$  matrix with only 1

### NOTE:

$\sim$  } not equal to

## LOGICAL OPERATORS

$\&$  - AND

$|$  - OR

$\sim$  - NOT