

**Mawlana Bhashani Science and Technology University**

**Department of Information and Communication Technology**

**Assignment: 03**

**Assignment Name:** Library Function of <math.h>

**Device info:**

System type: 64-bit operating system

Window Edition: Windows 11 Home Single Language

Code Blocks Version: Code::Blocks 20.03

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| **Submitted By** | **Submitted To** |
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| 1st Year 2nd Semester  Session: 2021-2022 | DEPARTMENT OF INFORMATION AND COMMUNICATION TECHNOLOGY  **MAWLANA BHASHANI SCIENCE AND TECHNOLOGY UNIVERSITY** |
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Date: 19-08-2023

**math.h library functions**

1. **sqrt():**

* computes square root of a number.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main() {  double Mugdha,root;  scanf("%lf",&Mugdha);  root= sqrt(Mugdha);  printf("Square root of %.2lf = %.2lf",Mugdha,root);  return 0;  } |  |

**2.exp():**

* computes the exponential raised to the argument

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| **Code** | **Input/Output** |
| #include <math.h>  #include <stdio.h>  int main(){  double Mugdha,res;  scanf("%lf",&Mugdha);  res= exp(Mugdha);  printf("Exponential of %.3f =%.3f",Mugdha,res);  return 0;  } |  |

**3.log():**

* computes natural logarithm of an argument.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double Mugdha,res;  scanf("%lf",&Mugdha);  res=log(Mugdha);  printf("log(%.1f)=%.2f",Mugdha,res);  return 0;  } |  |

**4.log10():**

* computes the base 10 logarithm of an argument

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double Mugdha,res;  scanf("%lf",&Mugdha);  res=log10(Mugdha);  printf("log(%.1f)=%.2f",Mugdha,res);  return 0;  } |  |

**5.abs():**

* computes natural logarithm of an argument.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  int Mugdha,res;  scanf("%d",&Mugdha);  res=abs(Mugdha);  printf("%d",res);  return 0;  } |  |

**6.pow():**

* Computes power of a number

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double Mugdha,power,t;  printf("Enter the base number: ");  scanf("%lf",&Mugdha);  printf("Enter the power raised: ");  scanf("%lf",&power);  t=pow(Mugdha,power);  printf("%.2lf",t);  return 0;  } |  |

**7.ceil():**

* computes the nearest integer greater than argument

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double Mugdha;  scanf("%lf",&Mugdha);  int result;  result = ceil(Mugdha);  printf("Result is:%d",result);  return 0;  } |  |

**8.floor():**

* computes the nearest integer less than argument

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double Mugdha;  scanf("%lf",&Mugdha);  int result;  result =floor(Mugdha);  printf("Result is:%d",result);  return 0;  } |  |

**9.cbrt():**

* computes the cubic root of a number.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double Mugdha,cube;  scanf("%lf",&Mugdha);  cube= cbrt(Mugdha);  printf("Cube root is %.3lf",cube);  return 0;  } |  |

**10.asin():**

* computes arc sine argument.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double PI = 3.1415926;  double Mugdha,result;  scanf("%lf",&Mugdha);  result = asin(Mugdha);  printf("Inverse = %.2lf in radians\n",result);} |  |

**11.acos():**

* computes arc cosine argument.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double PI = 3.1415926;  double Mugdha,result;  scanf("%lf",&Mugdha);  result = acos(Mugdha);  printf("Inverse = %.2lf in radians\n",result);} |  |

**12.atan():**

* computes arc tangent argument.

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| **Code** | **Input/Output** |
| #include <stdio.h>  #include <math.h>  int main(){  double PI = 3.1415926;  double Mugdha,result;  scanf("%lf",&Mugdha);  result = atan(Mugdha);  printf("Inverse = %.2lf in radians\n",result);} |  |

**13.sin():**

* computes sine of a number.

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| **Code** | **Input/Output** |
| #include<stdio.h>  #include<math.h>  int main(){  double Mugdha;  double result;  scanf("%lf",&Mugdha);  result = sin(Mugdha);  printf("sin =%.2lf\n",result);  return 0;  } |  |

**14.cos():**

* computes cosine of a number.

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| **Code** | **Input/Output** |
| #include<stdio.h>  #include<math.h>  int main(){  double Mugdha;  double result;  scanf("%lf",&Mugdha);  result =cos(Mugdha);  printf("cos =%.2lf\n",result);  return 0;  } |  |

**15.tan():**

* computes tangent of a number.

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| **Code** | **Input/Output** |
| #include<stdio.h>  #include<math.h>  int main(){  double Mugdha;  double result;  scanf("%lf",&Mugdha);  result =tan(Mugdha);  printf("tan =%.2lf\n",result);  return 0;  } |  |