**EXPERIMENT 1 Basic Mathematics using SCILAB/ MATLAB**

**DATE:**

Compute the following quantities at command prompt:

1. 25/(25-1) and compare with (1-1/25)-1
2. (3(5-1)/(5+1)2)-1
3. Area = πr2 with r=π1/3-1
4. *e***3**, *ln*(*e***3**),*log*10(*e***3**),*log*10(10**5**)
5. *e*π√163, sin2π/6+cos2π/6
6. *y=* cosh2*x*-sinh2*x;* where *x*=32π
7. Solve 3*x*=17 for *x*
8. (1+3*i)*/(1-3*i), ei*π/4
9. Execute the commands exp(pi/2\*i) and exp(pi/2i). Explain difference between the two results.
10. cot (0), tan-1(∞)

Note down the commands used and result obtained in following format:

|  |  |  |
| --- | --- | --- |
| Sr. No. | Commands | Results |
|  | (2^5)/((2^5)-1)  ((1-1/2^5))^(-1) | 1.0322581  1.0322581 |
|  | (3\*(sqrt(5)-1))/((sqrt(5)+1)^2)-1 | -0.645898 |
|  | (%pi)\*(((%pi)^(1/3)-1)^2) | 0.678099 |
|  | %e^3  log(%e^3)  log10(%e^3)  log10(10^5) | 20.085537  3  1.3028834  5 |
|  | (%e)^((%pi)\*sqrt(163))  (sin(%pi/6))^2+(cos(%pi/6))^2 | 2.625D+17  1 |
|  | (cosh(32\*%pi)^2)-(sinh(32\*%pi)^2) | 0 |
|  | x=log(17)/log(3) | x=2.5789019 |
|  | (1+%i\*3)/(1-%i\*3)  %e^(%i\*%pi/4) | -0.8 + 0.6i  0.7071068 + 0.7071068i |
|  | %e^((%pi/2)\*%i)  %e^(%pi/(2\*%i)) | i  -i |
|  | cos(0)/sin(0)  atan(%inf) | Inf  1.5707963 |