**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)  inv(1 - 1/(2^5)) | ans = 1.0322581  ans = 1.0322581 |
|  | (3(sqrt(5)-1))/((sqrt(5)+1)^2)-1 | ans =  -0.7135255 |
|  | r= %pi^(1/3)-1;  area=%pi\*(r^2) | area =  0.678099 |
|  | (%e)^3  log((%e)^3)  log10(%e^3)    log10(10^5) | ans = 20.085537  ans = 3  ans = 1.3028834  ans = 5. |
|  | %e^(%pi\*sqrt(163))    (sin(%pi/6))^2+(cos(%pi/6))^2 | ans = 2.625D+17  ans = 1. |
|  | x= 32\*%pi;  y = cosh(x)^2-sinh(x)^2 | y = 0. |
|  | x= log(17)/log(3) | x = 2.5789019 |
|  | (1+3\*%i)/(1-3\*%i)  %e^(%i\*%pi/4) | ans = -0.8 + 0.6i  ans = 0.7071068 + 0.7071068i |
|  | exp((%pi/2)\*%i)  exp(%pi/(2\*%i)) | ans = i  ans = -i |
|  | cotg(0)    atan(%inf) | ans = Inf  ans = 1.5707963 |