**King Fahd University of Petroleum and Minerals**

**Department of Mathematics**

**MATLAB Command Sheet**

**MATH101 Recitation Lab**

| Mathematical Expression | MATLAB | Mathematical Expression | MATLAB |
|---|---|---|---|
| $\sin(x)$ | sin(x) | $\cot^{-1}(x)$ | acot(x) |
| $\tan(x)$ | tan(x) | $\csc^{-1}(x)$ | acsc(x) |
| $e^x$ | exp(x) | $x^n$ | x^n |
| $\ln x$ | log(x) | $\sqrt{x}$ | sqrt(x) |
| $\cos^{-1}(x)$ | acos(x) | $\sqrt[n]{x}$ | nthroot(x,n) |
| $|x|$ | abs(x) | $\infty$ | inf |

| **MATLAB command** | **Usage** |
|---|---|
| plot | to graph a function |
| solve(f==c) | Solve f(x)=c |
| diff(f,'x',n) | $f^{(n)}(x)$ |
| vpa(f(a)) | To convert the fraction to decimal number |
| finverse(f) | To find it's inverse function |
| limit(function, variable, number) | The limit of the function with respect to the variable when it approaches to the desired number. |

| | |
|---|---|
| vpa(a) | defining the variable $a$ |
| z = linspace(x1,x2) | returns a row vector of 100 evenly spaced points between x1 and x2. |
| limit(function, variable, number, 'left') | The limit of the function with respect to the variable when it approaches to the desired number from the left |
| piecewise(cond1, val, cond2, val2,...) | To define a piecewise function |
| floor(). | $\llbracket \quad \rrbracket$ the greatest integer function. |
| simplify() | Simplify expression |
| subs(cos(a) + sin(b), {a,b}, {sym('alpha'),2}) | ans = $\sin(2) + \cos(\alpha)$ |
| factor(x^4-8*x) | $\left(x \quad x-2 \quad x^2+2x+4\right)$ |