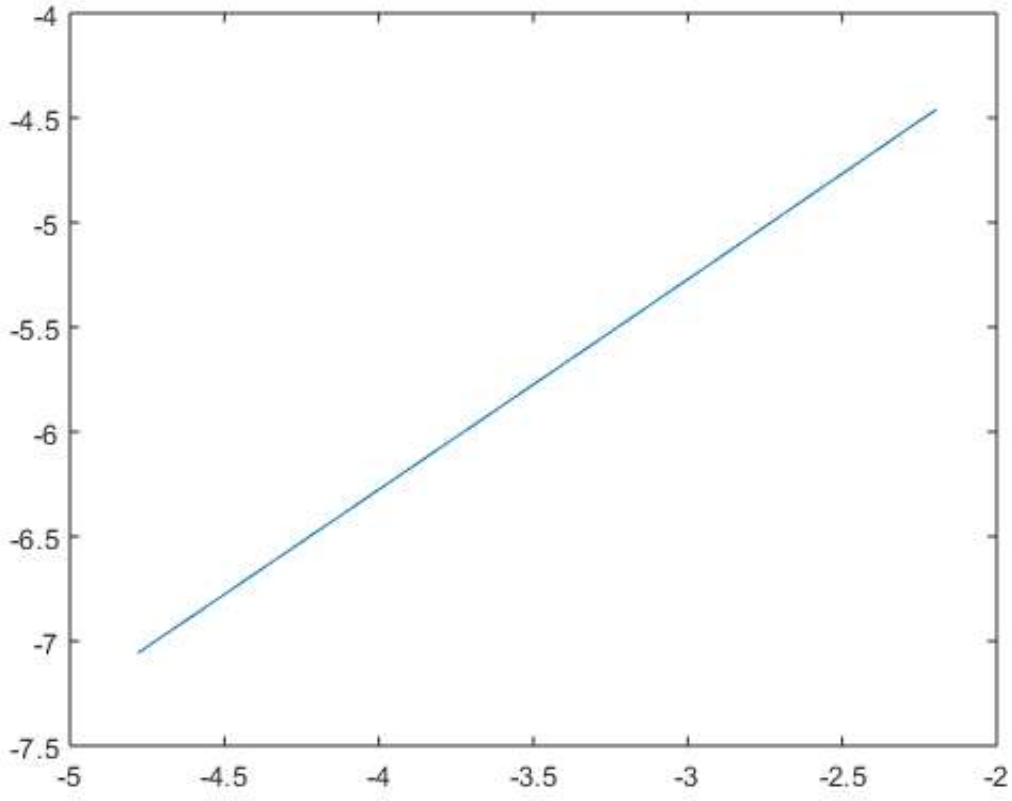
```
Beta = 0.5;

[Asol_analytical, symSol] = Analytical(Beta);
disp("Analytical solution");
disp(symSol);

N=0;
N_arr = [];
err_arr=[];
percent_err = 10;
while(percent_err>0.1)
        N=N+10;
        N_arr = [N_arr;N];
        delta = 1/(N-1);
        y = [1;zeros(N-1,1)];
        b = (1/delta^2)*ones(N-2, 1);
        a = [0;b];
        d = [1; -1*(2/(delta)^2 + Beta^2)*ones(N-2, 1)];
        Asol_numerical = Numerical_A(a, b, d, y, N);
        Bsol_numerical = Numerical_B(a, b, d, y, Biot, N);
        err = abs(Asol_numerical(N) - Asol_analytical(1));
        err_arr = [err_arr; err];
        percent_err = err*100/Asol_analytical(1);
end

fprintf("Percentage error in analytical and numerical solution for N = %d", N)
disp(percent_err);
ln_N = log(1./(N_arr-1));
ln_err = log(err_arr);
plot(ln_N, ln_err);
xlabel = "log delta(x)";
ylabel = "log Error";

%slope by taking any 2 points
p = (ln_err(8) - ln_err(2))/(ln_N(8) - ln_N(2));
fprintf("Order of accuracy is %f", p);
```

```
Analytical solution
exp(x/2)/(exp(1) + 1) + (exp(-x/2)*exp(1))/(exp(1) + 1)

Percentage error in analytical and numerical solution for N = 120    0.0972

Order of accuracy is 1.003763
```



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