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Practical: Bisection Method

```
f[x_] := x^3 - 5 x + 1;  
a = Input[1];  
b = Input[2];  
f[a] * f[b]  
If[f[a] * f[b] < 0, Print["Proceed"],  
  Print["Wrong choice of a and b"]];  
Maxxiter = 20;  
tol = 0.001;  
For[i = 1, i < Maxxiter, i = i + 1, m = 0.5 * (a + b);  
  If[f[a] * f[m] < 0, a = a; b = m, a = m; b = b];  
  Print["for the", i, "^th iteration", "the value of a is",  
    a, "and the value of b is", b]; If[Abs[b - a] < tol, Break[]]]  
Plot[f[x], {x, -5, 5} AxesLabel -> {"x", "f[x]"}, PlotStyle -> {Red, Thick},  
  PlotLabel -> "Pattern of roots for the bisection method"]
```

Out[35]= - 3