

METODO DE LA BISECCIÓN - LIVE SCRIPT

```
clc, clear;  
format long g;  
syms x;
```

INGRESAR EL X DE DATO INFERIOR:

```
Lim_inf = 0;
```

INGRESAR EL X DE DATO SUPERIOR:

```
Lim_sup = 8;
```

INGRESAR LA TOLERANCIA:

```
Tol = 0.0001;
```

INGRESAR EL NUMERO DE ITERACIONES:

```
Num_it = 20;
```

INGRESAR LA ECUACIÓN:

```
f_x= -1.654*0.44+9.36*log10(x+1)-0.2+ ( (log10(1.7/(4.2-1.5)))/ (0.4+ 1094/(x+1)^5.19) )+2.32*.
```

f_x =

$$\frac{234 \log(x+1)}{25 \log(10)} - \frac{7238720088643383}{36028797018963968 \left(\frac{1094}{(x+1)^{519/100}} + \frac{2}{5} \right)} - \frac{5805291272460659783}{879609302220800000}$$

```
=====
```

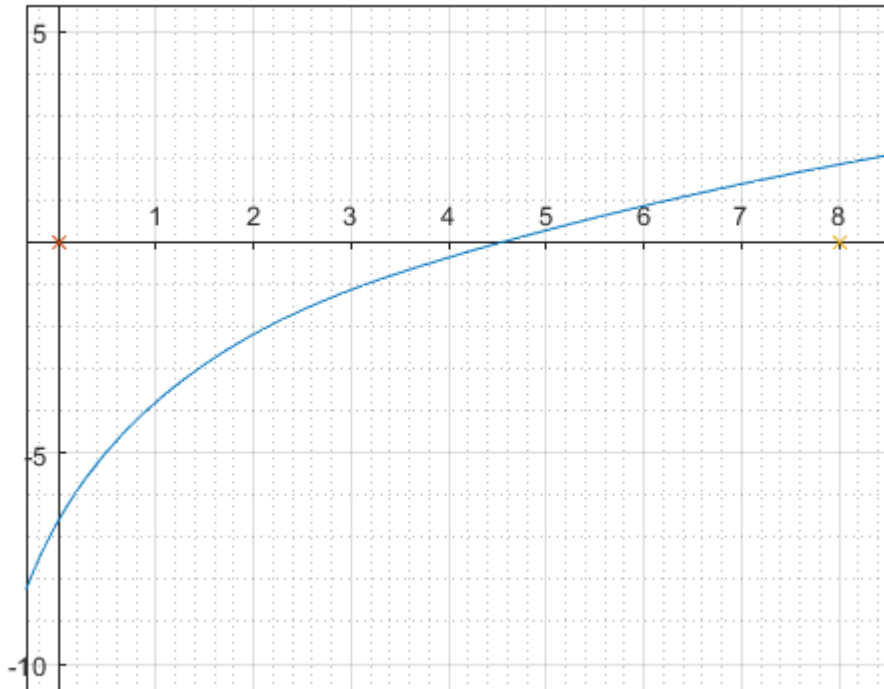
```
=====
```

```
=====
```

```
=====
```

```
n=[1 2];  
a_n=[1 2];  
b_n=[1 2];  
p_n=[1 2];  
f_n=[1 2];  
  
fplot(f_x);  
hold on;  
plot(Lim_inf,0,'x');  
plot(Lim_sup,0,'x');  
hold off;  
grid on;  
grid minor;
```

```
ax = gca;
ax.XAxisLocation = 'origin';
ax.YAxisLocation = 'origin';
```



```
f= @(x) eval(f_x);
i=1;
FA=f(Lim_inf)
```

```
FA =
-6.6000356526584
```

```
FB=f(Lim_sup)
```

```
FB =
1.84444166036704
```

```
while(i<=Num_it)
    p=Lim_inf+(Lim_sup-Lim_inf)/2;
    FP=f(p);
    plot(p,0,'o');
    hold on;
    grid on;
    grid minor;
    ax = gca;
    ax.XAxisLocation = 'origin';
    ax.YAxisLocation = 'origin';

    n(i)=i;
```

```

a_n(i)=Lim_inf;
b_n(i)=Lim_sup;
p_n(i)= p;
f_n(i)=FP;

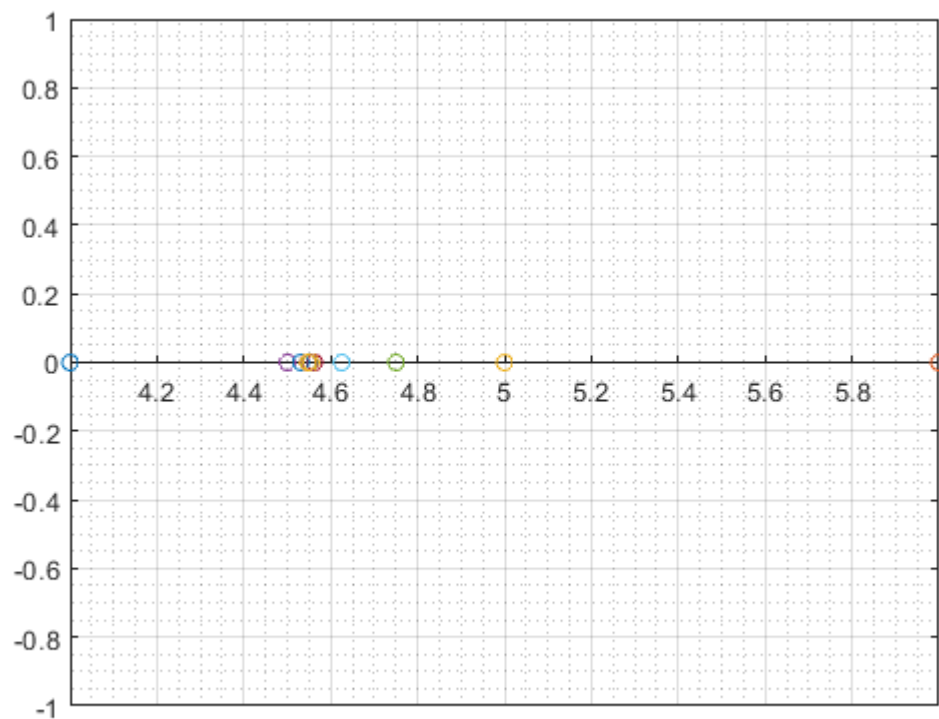
if((FP==0) || ((Lim_sup-Lim_inf)/2) < Tol )
    disp(p);
    disp(FP);
    break;
end

if(FA*FP>0)
    Lim_inf=p;
    FA=FP;

else
    Lim_sup=p;
    FB=FP;

end
i=i+1;
end
end

```



4.54779052734375
 2.83557216125274e-05

```

tabla=[n' a_n' b_n' p_n' f_n'];

```

```
NUM_IT=n';
An=a_n';
Bn=b_n';
Pn=p_n';
Fn=f_n';
```

```
Resultados = table(NUM_IT,An, Bn ,Pn, Fn)
```

```
Resultados = 17x5 table
```

	NUM_IT	An	Bn	Pn	Fn
1	1	0	8	4	-0.3629...
2	2	4	8	6	0.85874...
3	3	4	6	5	0.28189...
4	4	4	5	4.5	-0.0306...
5	5	4.5	5	4.75	0.12782...
6	6	4.5	4.75	4.625	0.04917...
7	7	4.5	4.625	4.5625	0.00942...
8	8	4.5	4.5625	4.53125	-0.0105...
9	9	4.53125	4.5625	4.546875	-0.0005...
10	10	4.546875	4.5625	4.5546875	0.00443...
11	11	4.546875	4.5546875	4.55078...	0.00194...
12	12	4.546875	4.55078...	4.54882...	0.00069...
13	13	4.546875	4.54882...	4.54785...	6.73832623...
14	14	4.546875	4.54785...	4.54736...	-0.0002...

```
⋮
```

```
xlswrite('RESULTADOS.xlsx',tabla)
```