Método de Newton-Raphson

```
syms x
%==============================
%====Definición de variables====
%==============================

%Intervalo
I = -2:0.01:1;

%Función
fx = exp(x)-x*sin(x);   %Cambiar si se quiere otra función

%x inicial
x0 = -0.5;              %Cambiar si se quiere iniciar en otro punto

%Numero de iteraciones
n = 15;                 %Cambiar para otro número de iteraciones

%Obtencion de los resultados en una tabla
tabla = f_newton_raphson(fx,x0,n)
```

tabla = 15×5 table

	k	xn	f(x0)	f´(x0)	xn+1
1	1	-0.5000000000...	0.36681789041...	1.5247474792...	-0.7405761579...
2	2	-0.7405761579...	-0.0228374626...	1.6981567820...	-0.7271277750...
3	3	-0.7271277750...	-0.0000460273...	1.6912492180...	-0.7271005600...
4	4	-0.7271005600...	-0.0000000001...	1.6912348603...	-0.7271005599...
5	5	-0.7271005599...	0	1.6912348603...	-0.7271005599...
6	6	-0.7271005599...	0	1.6912348603...	-0.7271005599...
7	7	-0.7271005599...	0	1.6912348603...	-0.7271005599...
8	8	-0.7271005599...	0	1.6912348603...	-0.7271005599...
9	9	-0.7271005599...	0	1.6912348603...	-0.7271005599...
10	10	-0.7271005599...	0	1.6912348603...	-0.7271005599...
11	11	-0.7271005599...	0	1.6912348603...	-0.7271005599...
12	12	-0.7271005599...	0	1.6912348603...	-0.7271005599...
13	13	-0.7271005599...	0	1.6912348603...	-0.7271005599...
14	14	-0.7271005599...	0	1.6912348603...	-0.7271005599...
15	15	-0.7271005599...	0	1.6912348603...	-0.7271005599...

```
%Plot de la funcion
plot(I,subs(fx,'x',I),'LineWidth',2,'Color','k')
grid on
xlabel('x')
```

```
ylabel('y')
axis([-2 1 -1.6 1.9])
hold on

%Plot de las primeras 10 rectas
f_plot_10_rectas_tang(fx,x0,I)
hold off

legend({'exp(x)-xsin(x)', 'it 1', 'it 2', 'it 3', 'it 4', 'it 5', 'it 6', 'it 7', 'it 8', 'it 9
```