

Método falsa posición

```
g = 9.8;
m = 68.1;
t = 10;
v = 40;
limi=12;
lims=16;
es=0.5;
syms c;
f=((g*m)./c).*(1 - exp(-(c/m)*t)) - v);

f1=double(subs(f,c,limi));
f2=double(subs(f,c,lims));
i=1;
ea(i)=100;
if (f1*f2) < 0
    iter(i) = i;
    xi(i)=limi;
    xs(i)=lims;
    f1=double(subs(f,c,xi(i)));
    f2=double(subs(f,c,xs(i)));

    xr(i)=xs(i)-((f2*(xi(i)-xs(i)))/(f1-f2));
    f3=double(subs(f,c,xr(i)));
    et(i)=abs((14.7802-xr(i))/14.7802*100);
    while abs(ea(i)) >= es
        if f1*f3<0
            xi(i+1)=xi(i);
            xs(i+1)=xr(i);
            f1=subs(f,c,xi(i+1));
            f2=subs(f,c,xs(i+1));
        end
        if f1*f3> 0
            xi(i+1)=xr(i);
            xs(i+1)=xs(i);
            f1=double(subs(f,c,xi(i+1)));
            f2=double(subs(f,c,xs(i+1)));
        end
        xr(i+1)=xs(i+1)-((f2*(xi(i+1)-xs(i+1)))/(f1-f2));
        f3=double(subs(f,c,xr(i+1)));

        ea(i+1)=abs((xr(i+1)-xr(i))/(xr(i+1))*100);
        et(i+1)=abs((14.7802-xr(i+1))/14.7802*100);
        iter(i+1) = i+1;
        i=i+1;
    end
end
```

```
table(iter',xi',xs',xr',ea',et','VariableNames',{ 'I','XI','Xu','Xr','Ea','Et'
'})
else
    fprintf('No hay raices');
end
```

ans = 3x6 table

	I	XI	Xu	Xr	Ea	Et
1	1	12	16.0000	14.9113	100.0000	0.8870
2	2	12	14.9113	14.7942	0.7916	0.0947
3	3	12	14.7942	14.7817	0.0845	0.0101