```matlab
function [ r ] = root_find( f,x,y,xt )
for i=1:1000
    if y+.1<x
        xu(i) = y+.1;
        xl(i) = y;
        y=y+.1;
    else
        xu(i) = x;
        xl(i) = y;
        break
    end
end
p=1;
for i = 1:length(xu)
    if f(xu(i))*f(xl(i)) <= 0
        while abs(xu(i)-xl(i)) > xt
            xm = (xu(i) + xl(i))/2;
            if f(xl(i))*f(xm)>0
                xl(i) = xm;
            else
                xu(i) = xm;
            end
        end
        r(p) = xm;
        p=p+1;
    end
end
end
```