```
function ME598_GrpR1_InvKin = params(loc)

    %loc = [21.5 -7.83 0];
    t1rad = atan(loc(2)/loc(1));
    t1 = t1rad*180/pi;

    %disance between projected point p on xo yo plane and origin of that
    %plane
    hordist = sqrt(loc(1)^2 + loc(2)^2);

    %position info from top of link 1 to end of link 3
    %point A is at joint 4
    Ax = hordist -5.5;
    Ay = loc(3) +7 - 10.5;
    distA = sqrt(Ax^2 + Ay^2);

    %Looking at mechanism from joint 2 to joint 4
    %phi is angle AOX
    phi = atan(Ay/Ax);
    %a is angle joint 3 O A
    a = acos((16^2-13.5^2-distA^2)/(-2*13.5*distA));
    %t2 is angle 3OX
    t2rad = phi+a;
    t2 = t2rad*180/pi;

    t3rad = acos((Ax-13.5*cos(t2rad))/16)+t2rad;
    t3 = -t3rad*180/pi;

    %alway made so that link 4 is horizonal and the end effector is
    %vertical
    t4 = -(t2+t3);

    %t5 always zero cause changing it doesn't affect the coordinate
    t5 = 0;
    p = dobotPlot([t1 t2 t3 t4 t5],1,1);
    if(t1>130 || t1<-130) || (t2>95 || t2<5) || (t4>85 || t4<-5) ||(p(1) ~= loc(1))
        disp('Warning! End-effector beyond robot workspace!');
        return
    end
    fprintf('q = (%.4f,%.4f,%.4f,%.4f,%.4f)\n', t1,t2,t3,t4,t5);
```