C++ code

```
#include<iostream>
#include<cmath>
using namespace std;
define pi 3.14159265359

const float L1 = 12.5; // Length of link 1 (shoulder to elbow)
const float L2 = 12.5; // Length of link 2 (elbow to wrist)
const float L3 = 7.15; // Length of link 3 (wrist to end-effector)

float radian(float theta){     //will convert degree to radian
      return theta*pi/180;
}

float degree(float theta){     //will convert radian to degree
      return theta*180/pi;
}

void moveBraccio(float x, float y, float gamma) {
      // Calculate position of point (a,b)
      float a = x - (L3 * cos(radian(gamma)));
      float b = y - (L3 * sin(radian(gamma)));
            //C is distance of point (a,b) to origin
      float C = sqrt(pow(a, 2) + pow(b, 2));
      // Check if position is within reachable workspace
      if ((L1 + L2) >= C) {
   // Calculate angles
            //alpha and beta are mentioned above in the picture
            float alpha = degree(acos((pow(L1, 2) + pow(C, 2) - pow(L2, 2)) /
(2 * L1 * C)));
            float Beta = degree(acos((pow(L1, 2) + pow(L2, 2) - pow(C, 2)) /
(2 * L1 * L2)));


             //calculating the angles which we really need form inverse
kinematics of 2dof
            float theta1 = degree(atan(b/ a)) - alpha;
            float theta2 = 180 - Beta;
            float theta3 = gamma - theta1 - theta2;

      // printing the values for our simplicity and verifying the final
answer

            cout<<"theta 1 = "<<theta1<<"\n";
            cout<<"theta 2 = "<<theta2<<"\n";
            cout<<"theta 3 = "<<theta3<<"\n";
```

```
	}
}
int main() {

	float x,y,gamma;
	cout<<"Enter x = ";
	cin>>x;
	cout<<"Enter y = ";
	cin>>y;
	cout<<"Enter gamma = ";
	cin>>gamma;

	moveBraccio(x,y,gamma);
}
```