%Parameters of plot

axis(gca,'equal');%Aspect ratio of the plot

axis([-40 40 -40 40]);%Limits of axes

set (gcf, 'WindowButtonMotionFcn', @mouse);

L=20;

P1=[-L,0];

for i=1:80

P2 = mouse();

if i>10

line([Pi(1) P2(1)], [Pi(2) P2(2)]);

x=P2(1);

y=P2(2);

%Calculations of P3

e=(x\*x+y\*y-L\*L)/(2\*y);

f=(-L-x)/y;

A=1+f\*f;

B=2\*(e\*f+L);

C=e\*e;

x1=(-B-(sqrt(B\*B-4\*A\*C)))/(2\*A);

y1=e+f\*x1;

P3=[x1,y1];

m=(x1+L)/y1;

g=sqrt(1+m\*m);

if y>0

y2=2\*L/g;

else

y2=-2\*L/g;

end

x2=(y2\*m-L);

P4=[x2,y2];

k=(x2\*x2+y2\*y2-x\*x-y\*y)/(2\*x2-2\*x);

n=(y-y2)/(x2-x);

U=1+n\*n;

V=2\*(k\*n-x\*n-y);

W=k\*k-2\*k\*x+x\*x+y\*y-L\*L;

if y>0

y3=(-V+(sqrt(V\*V-4\*U\*W)))/(2\*U);

else

y3=(-V-(sqrt(V\*V-4\*U\*W)))/(2\*U);

end

x3=k+n\*y3;

P5=[x3,y3];

r=(x3-x2)/(y3-y2);

s=sqrt(1+r\*r);

if y<0

y4=y2+2\*L/s;

else

y4=y2-2\*L/s;

end

x4=x2+r\*(y4-y2);

P6=[x4,y4];

P3\_circ = viscircles(P3,0.1);

P1\_circ = viscircles(P1,0.1);

P4\_circ = viscircles(P4,0.1);

P5\_circ = viscircles(P5,0.1);

P6\_circ = viscircles(P6,0.1);

segment1=line([P1(1) P3(1)], [P1(2) P3(2)]);

segment2=line([P2(1) P3(1)], [P2(2) P3(2)]);

segment3=line([P4(1) P3(1)], [P4(2) P3(2)]);

segment4=line([P4(1) P5(1)], [P4(2) P5(2)]);

segment5=line([P6(1) P5(1)], [P6(2) P5(2)]);

segment6=line([P2(1) P5(1)], [P2(2) P5(2)]);

pause(0.1);

delete(segment1);

delete(segment2);

delete(segment3);

delete(segment4);

delete(segment5);

delete(segment6);

delete(P3\_circ);

delete(P1\_circ);

delete(P4\_circ);

delete(P5\_circ);

delete(P6\_circ);

line([P6i(1) P6(1)], [P6i(2) P6(2)]);

end

Pi=P2;

P6i=P6;

pause(0.1);

end

function P2 = mouse()

C = get (gca, 'CurrentPoint');

x=C(1,1);

y=C(1,2);

P2=[x,y];

end