

```
> theta := -log(cos(t));
                                 $\theta := -\ln(\cos(t))$  (1)
```

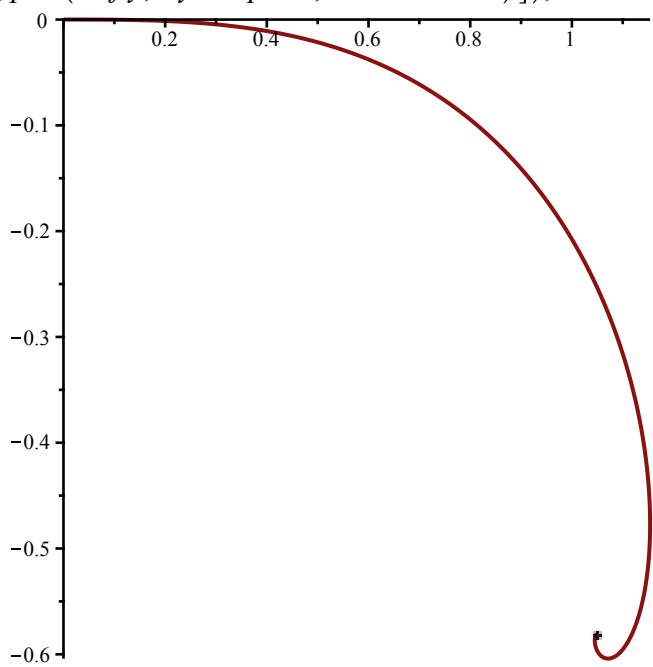
```
> zinfy := int(cos(t)^I, t=0..Pi/2);
                                
$$zinfy := \frac{\Gamma\left(\frac{1}{2} + \frac{I}{2}\right) \sqrt{\pi}}{2 \Gamma\left(1 + \frac{I}{2}\right)}$$
 (2)
```

```
> zinfy := [[Re(evalf(zinfy)), Im(evalf(zinfy))]];
                                zinfy := [[1.049478078, -0.5824562520]] (3)
```

```
> int(cos(t)^I, t=0..7*Pi/100);
                                
$$\sin\left(\frac{7\pi}{100}\right) \text{hypergeom}\left(\left[\frac{1}{2}, \frac{1}{2} - \frac{I}{2}\right], \left[\frac{3}{2}\right], \sin\left(\frac{7\pi}{100}\right)^2\right)$$
 (4)
```

```
> croquette:=proc(n)
  local i,R,x,z;
  R:=[[0,0]];
  i:=1;
  while i<n/2 do
    x:=i/n*Pi;
    z:=sin(x)*hypergeom([1/2,1/2-I/2],[3/2],sin(x)^2);
    z:=evalf(z);
    R:=[op(R),[Re(z),Im(z)]];
    i:=i+1;
  od;
  R;
end;
```

```
> C3000 := croquette(3000);
> display([plot(C3000), plot(zinfy, style = point, color = black)]);
```



```
> kroquette:=proc(n, rho)
```

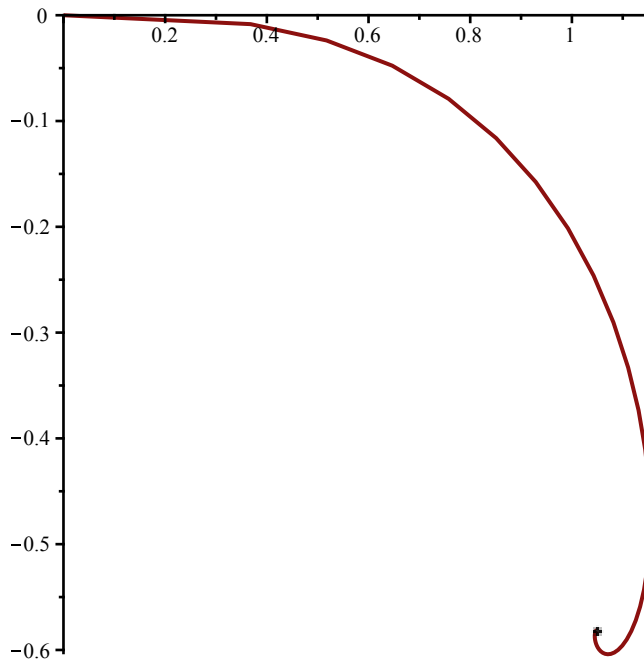
```

local i,R,x,z;
R:=[[0,0]];
i:=2;
while i<n do
  x:=Pi/2-rho^i*Pi/2;
  z:=sin(x)*hypergeom([1/2,1/2-I/2],[3/2],sin(x)^2);
  z:=evalf(z);
  R:=[op(R),[Re(z),Im(z)]];
  i:=i+1;
od;
R;
end:

```

```
> K1000 := kroquette(200,  $\frac{7}{8}$ ):
```

```
> display([plot(K1000),plot(zinfy,style=point,color=black)]);
```



```
> with(plots);
```

[*animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal, (5) conformal3d, contourplot, contourplot3d, coordplot, coordplot3d, densityplot, display, dualaxisplot, fieldplot, fieldplot3d, gradplot, gradplot3d, implicitplot, implicitplot3d, inequal, interactive, interactiveparams, intersectplot, listcontplot, listcontplot3d, listdensityplot, listplot, listplot3d, loglogplot, logplot, matrixplot, multiple, odeplot, pareto, plotcompare, pointplot, pointplot3d, polarplot, polygonplot, polygonplot3d, polyhedra_supported, polyhedraplot, rootlocus, semilogplot, setcolors, setoptions, setoptions3d, shadebetween, spacecurve, sparsematrixplot, surfdata, textplot, textplot3d, tubeplot*]

```
>
```