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> theta := -log(cos(t));

$$\theta := -\ln(\cos(t)) \quad (1)$$

> zinfty := int\left(\cos(t)^I, t=0..\frac{\text{Pi}}{2}\right);

$$zinfty := \frac{\Gamma\left(\frac{1}{2} + \frac{I}{2}\right) \sqrt{\pi}}{2 \Gamma\left(1 + \frac{I}{2}\right)} \quad (2)$$

> zinfty := [[Re(evalf(zinfty)), Im(evalf(zinfty))]];

$$zinfty := [[1.049478078, -0.5824562520]] \quad (3)$$

> int\left(\cos(t)^I, t=0..\frac{7 \cdot \text{Pi}}{100}\right);

$$\sin\left(\frac{7 \pi}{100}\right) \text{hypergeom}\left(\left[\frac{1}{2}, \frac{1}{2} - \frac{I}{2}\right], \left[\frac{3}{2}\right], \sin\left(\frac{7 \pi}{100}\right)^2\right) \quad (4)$$

> 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(zinfty, style=point, color=black)]);

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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(zinfty, style = point, color = black) ] );

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The plot shows a red curve on a Cartesian coordinate system. The horizontal axis (x-axis) ranges from 0 to 1 with major tick marks at 0, 0.2, 0.4, 0.6, 0.8, and 1. The vertical axis ranges from 0 to -0.6 with major tick marks at 0, -0.1, -0.2, -0.3, -0.4, -0.5, and -0.6. The curve begins at the origin (0,0) and spirals outwards, decreasing in radius as it moves downwards. It passes through approximately (-0.1, -0.1), (-0.2, -0.2), (-0.3, -0.3), (-0.4, -0.4), and (-0.5, -0.5). At the far end of the spiral, there is a small black dot representing the point at infinity.

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> with(plots);
[animate, animate3d, animatecurve, arrow, changecoords, complexplot, complexplot3d, conformal,
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]

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