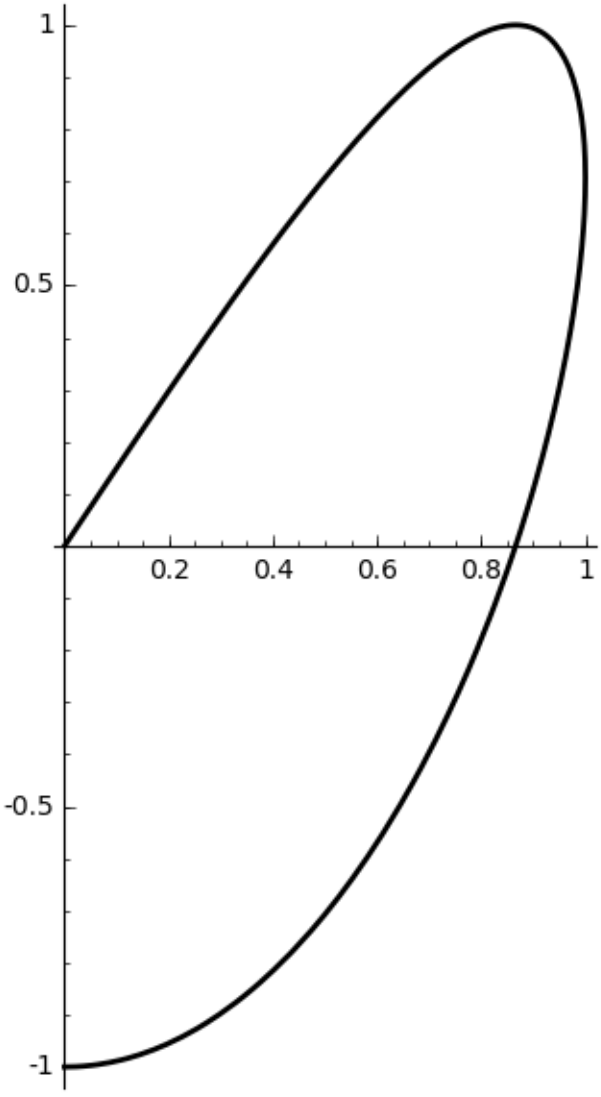
Courbes_TD_01

February 12, 2020

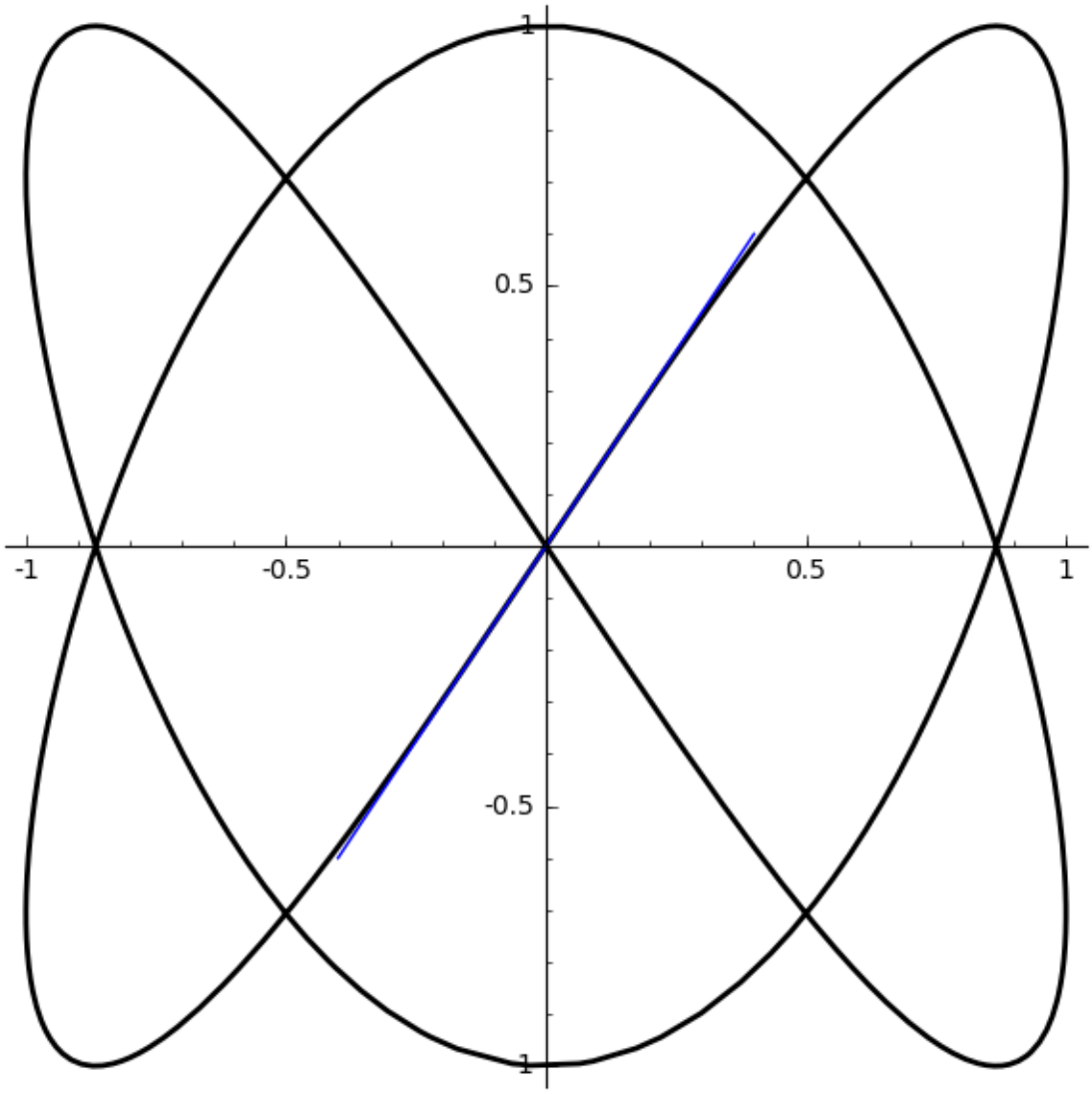
In [1]:
```
parametric_plot((sin(2*x),sin(3*x)),(x,0,pi/2),color='black',thickness=2)
```

Out[1]:



In [2]:
```
parametric_plot((sin(2*x),sin(3*x)),(x,0,2*pi),color='black',thickness=2)+parametric_pl
```

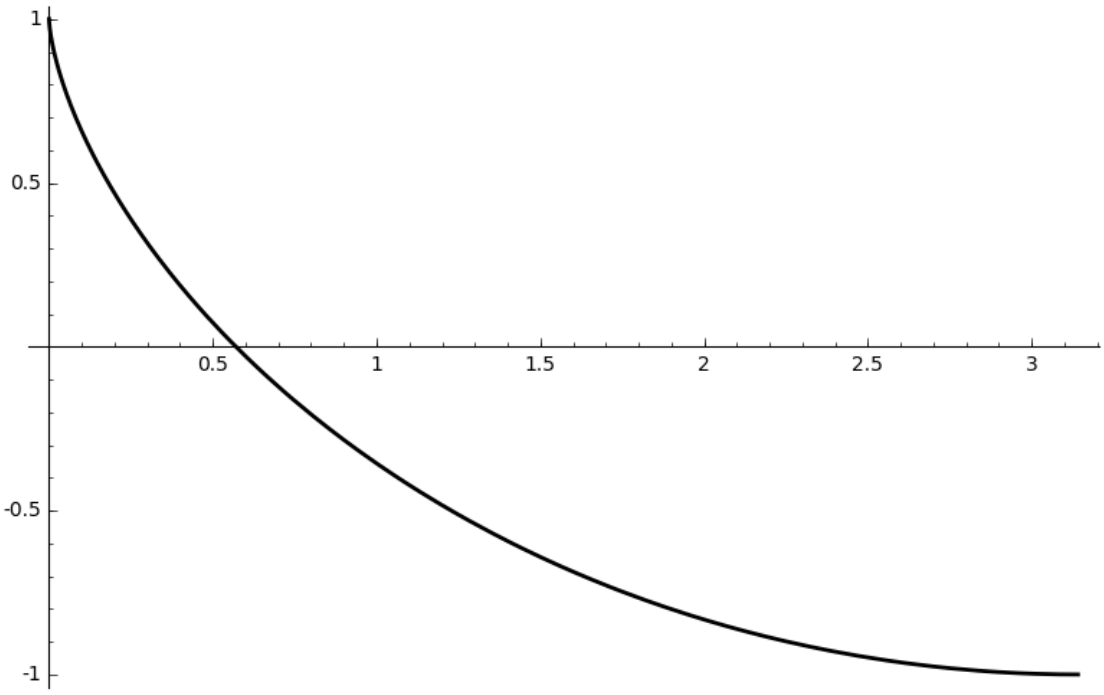
Out[2]:



In [ ]:

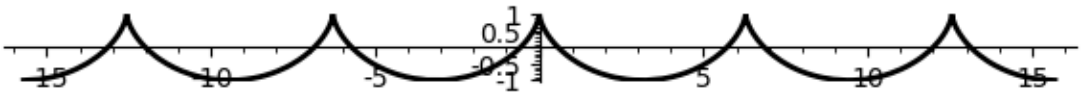
In [3]:
```
parametric_plot((x-sin(x),cos(x)),(x,0,pi),color='black',thickness=2)
```

Out[3]:



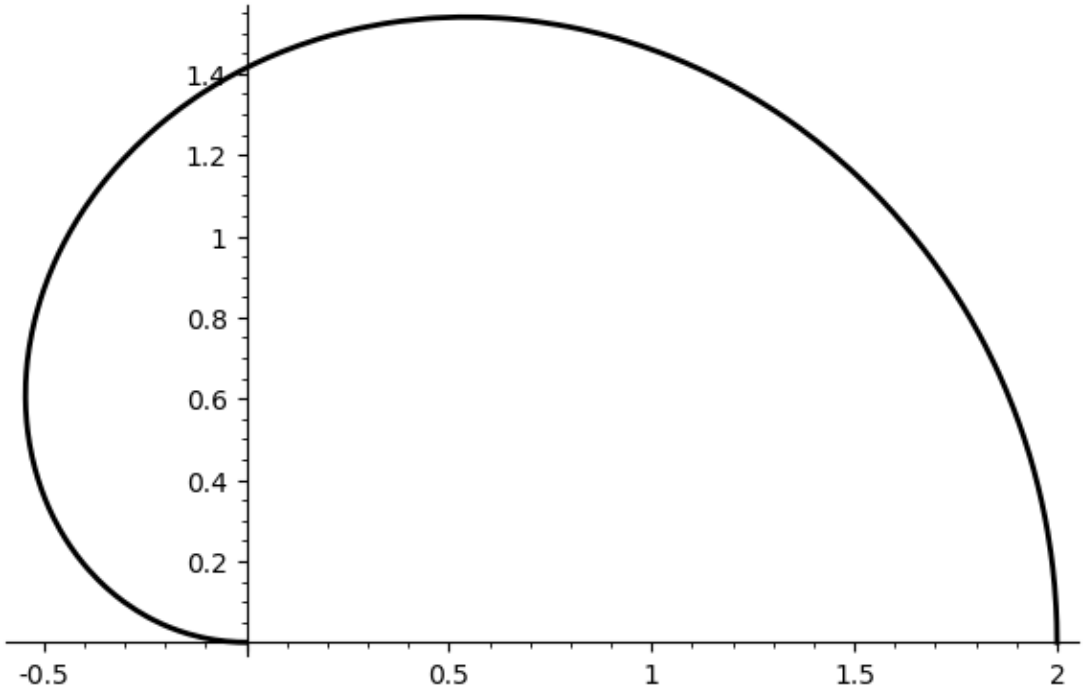
In [4]: parametric_plot((x-sin(x),cos(x)),(x,-5*pi,5*pi),color='black',thickness=2)

Out[4]:



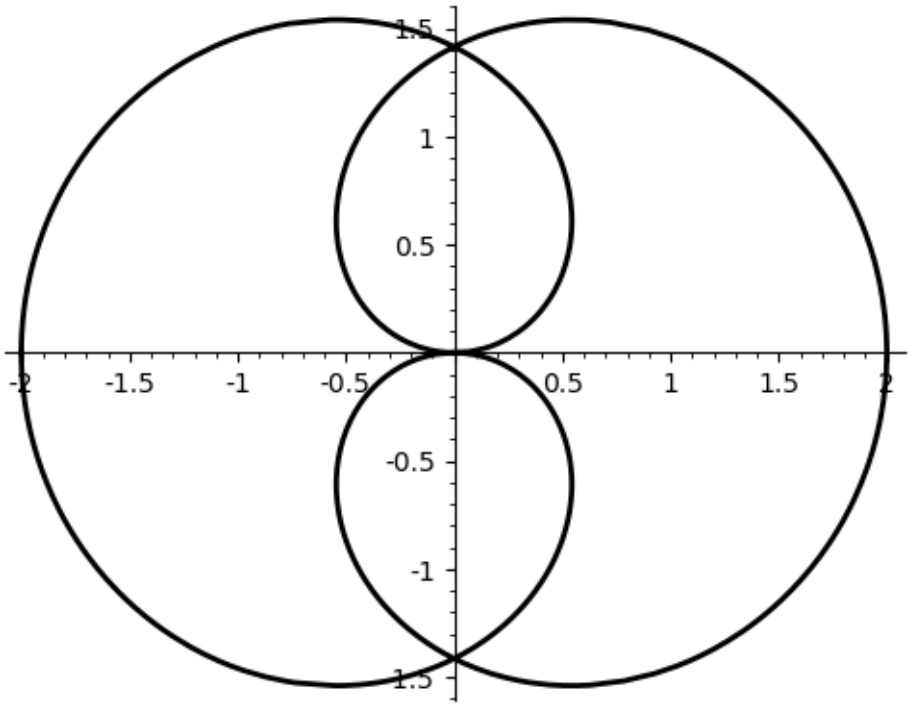
In [49]: parametric_plot((cos(x)+cos(3*x),sin(x)+sin(3*x)),(x,0,pi/2),color='black',thickness=

Out[49]:



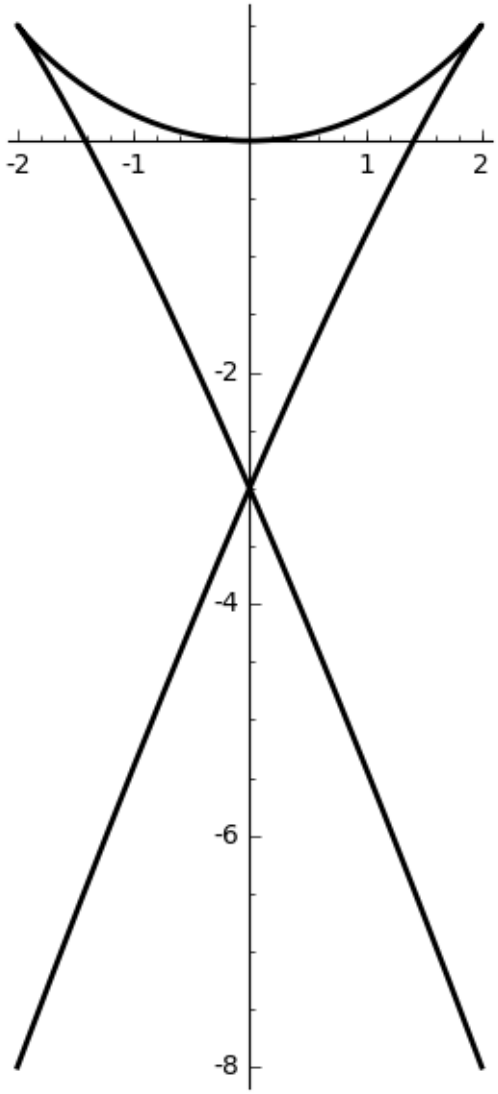
In [50]: parametric_plot((cos(x)+cos(3*x),sin(x)+sin(3*x)),(x,-pi,pi),color='black',thickness=

Out[50]:



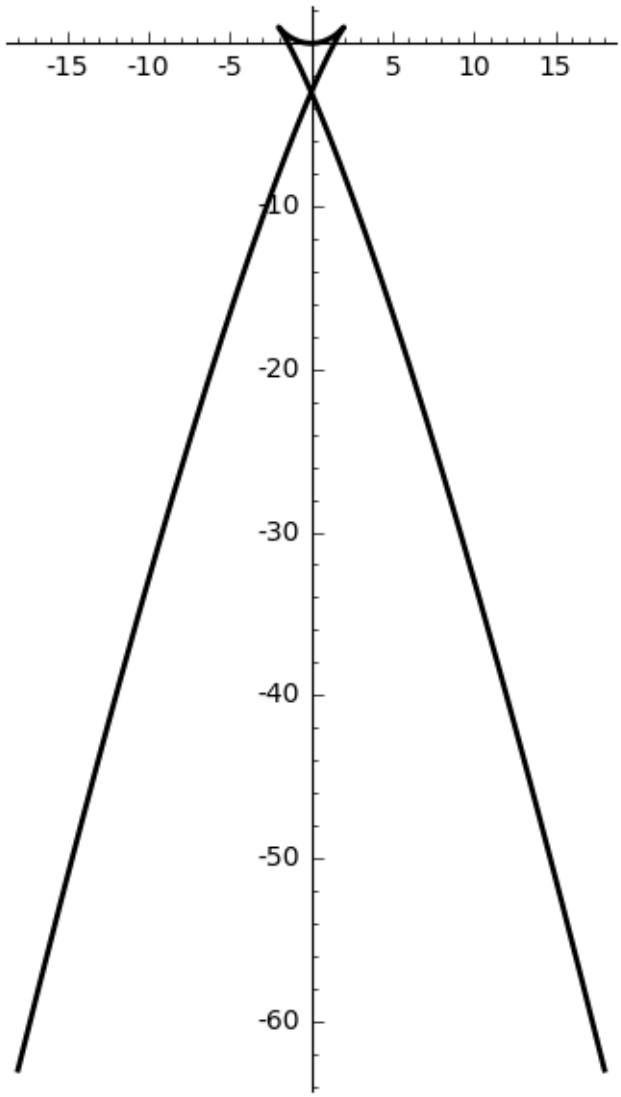
In [5]:
```
parametric_plot((3*x-x^3,2*x^2-x^4),(x,-2,2),color='black',thickness=2)
```

Out[5]:



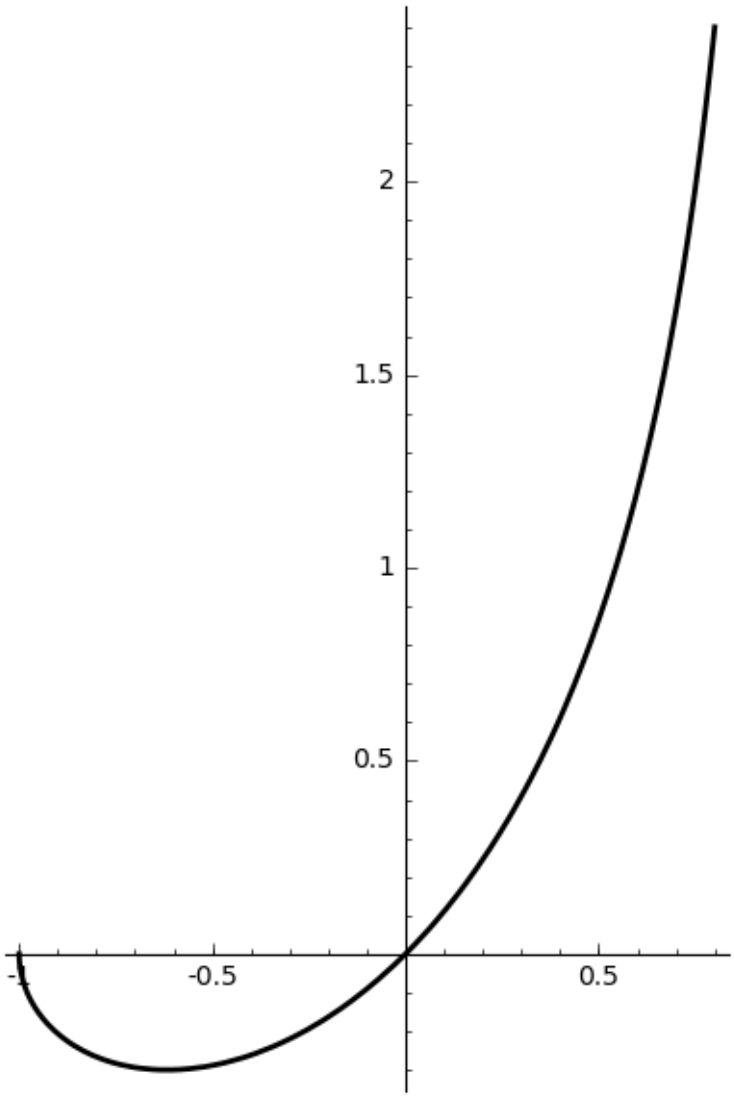
In [30]:
```
parametric_plot((3*x-x^3,2*x^2-x^4),(x,-3,3),color='black',thickness=2)
```

Out[30]:



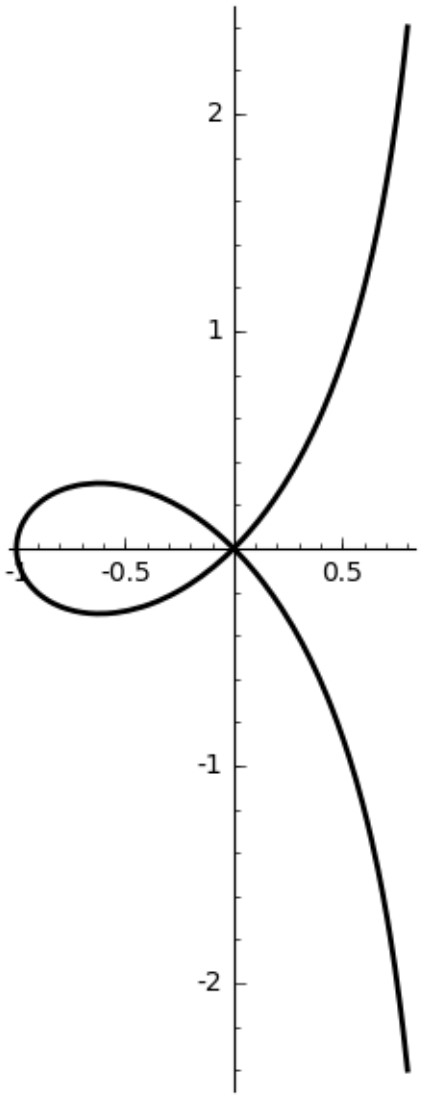
In [6]: parametric_plot(((x^2-1)/(x^2+1),(x^3-x)/(x^2+1)),(x,0,3),color='black',thickness=2)

Out[6]:



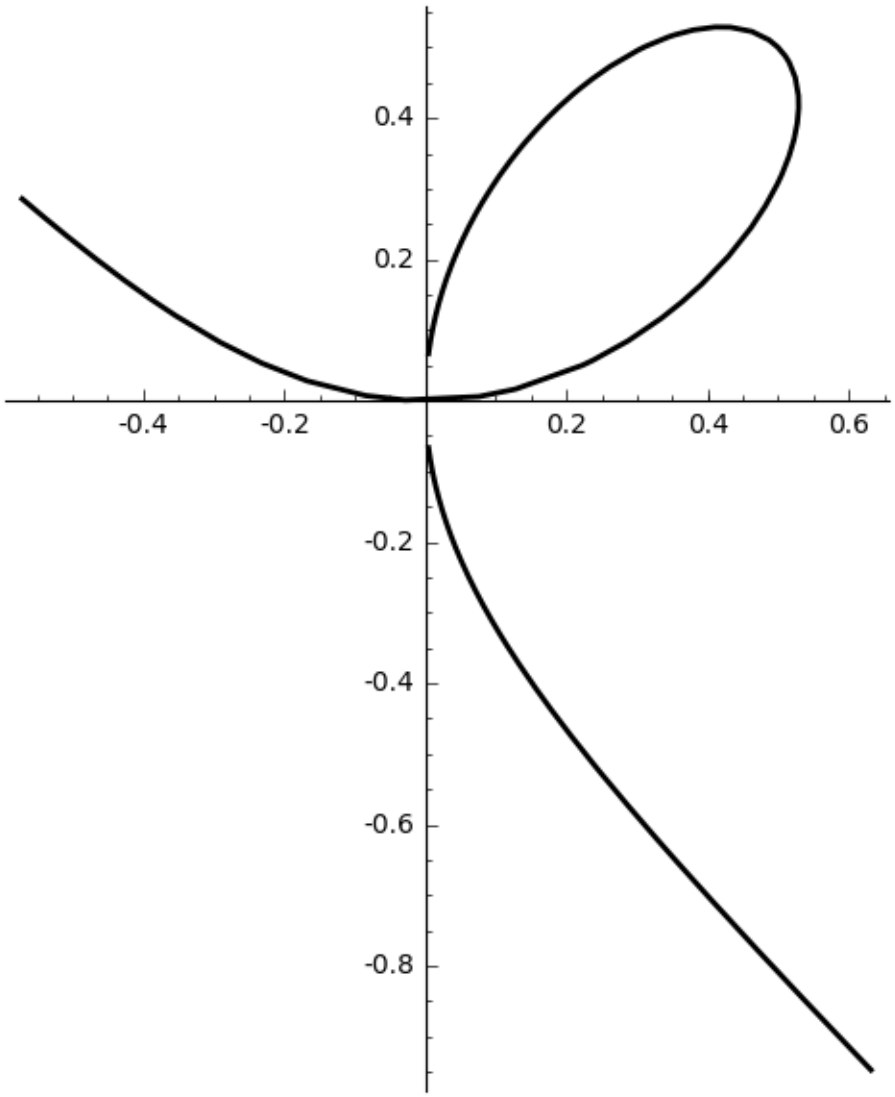
In [7]: parametric_plot(((x^2-1)/(x^2+1),(x^3-x)/(x^2+1)),(x,-3,3),color='black',thickness=2)

Out[7]:



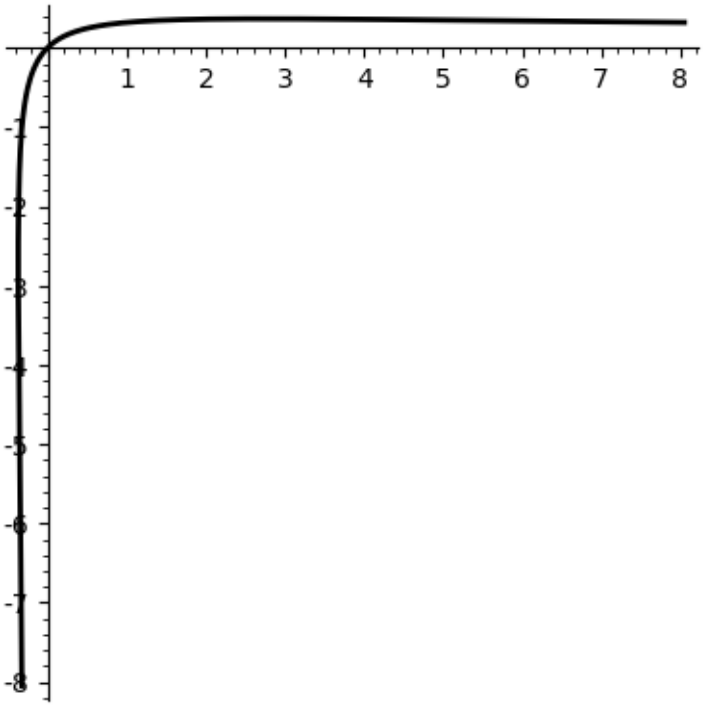

```
In [9]: parametric_plot((x/(x^3+1),x^2/(x^3+1)),(x,-0.5,15),color='black',thickness=2)+parametr
```

Out[9]:



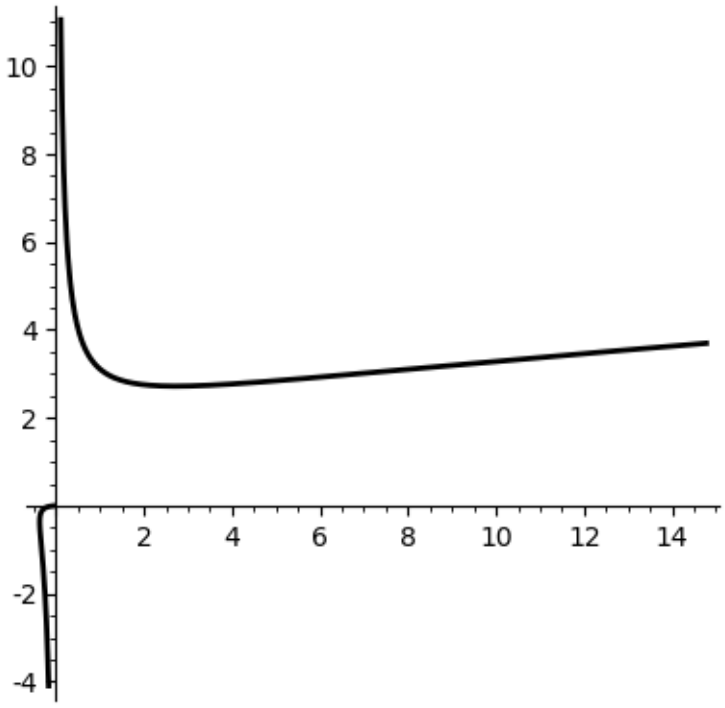

```
In [13]: parametric_plot((x*ln(x),ln(x)/x),(x,0.2,5),color='black',thickness=2)
```

Out[13]:



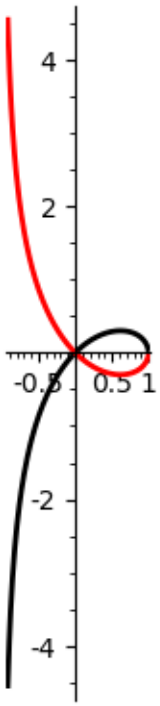
In [29]:
```
parametric_plot((x*e^x,e^x/x),(x,-4,-0.2),color='black',thickness=2)+parametric_plot(
```

Out[29]:



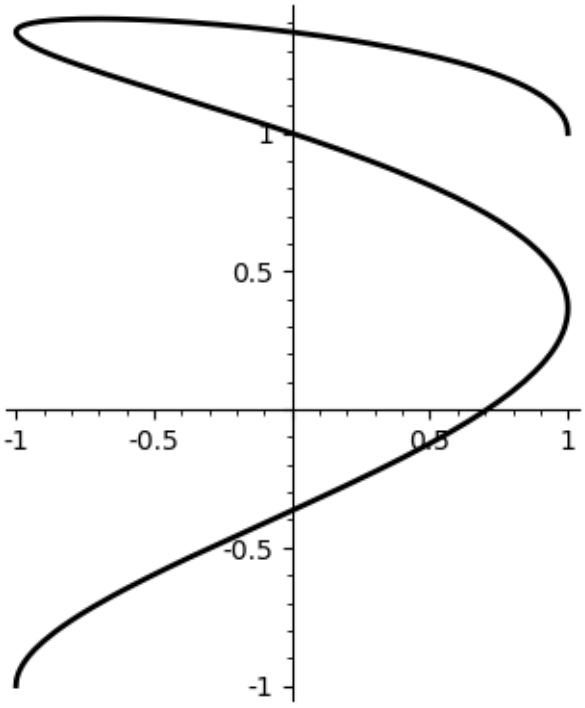
In [61]:
```
parametric_plot((sin(x),tan(x)*(1-sin(x))),(x,-pi/2+0.4,pi/2-0.1),color='black',thickn
```

Out[61]:



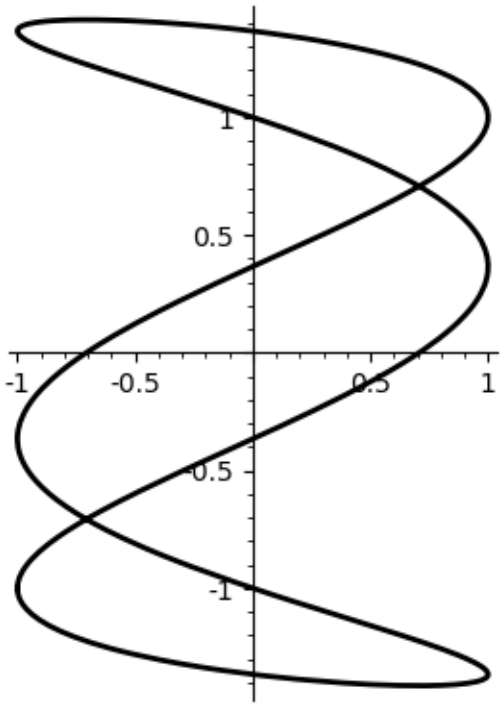
In [43]:
```
parametric_plot((cos(x),cos(x/3)+sin(x/3)),(x,0,3*pi),color='black',thickness=2)
```

Out[43]:



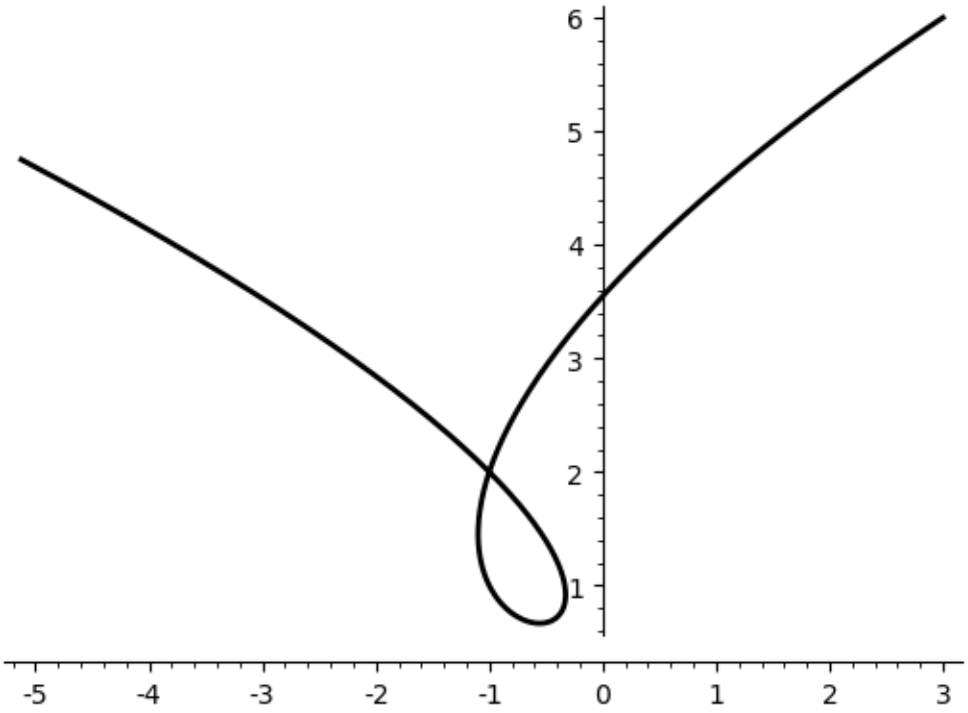
In [42]:
```
parametric_plot((cos(x),cos(x/3)+sin(x/3)),(x,-3*pi,3*pi),color='black',thickness=2)
```

Out[42]:



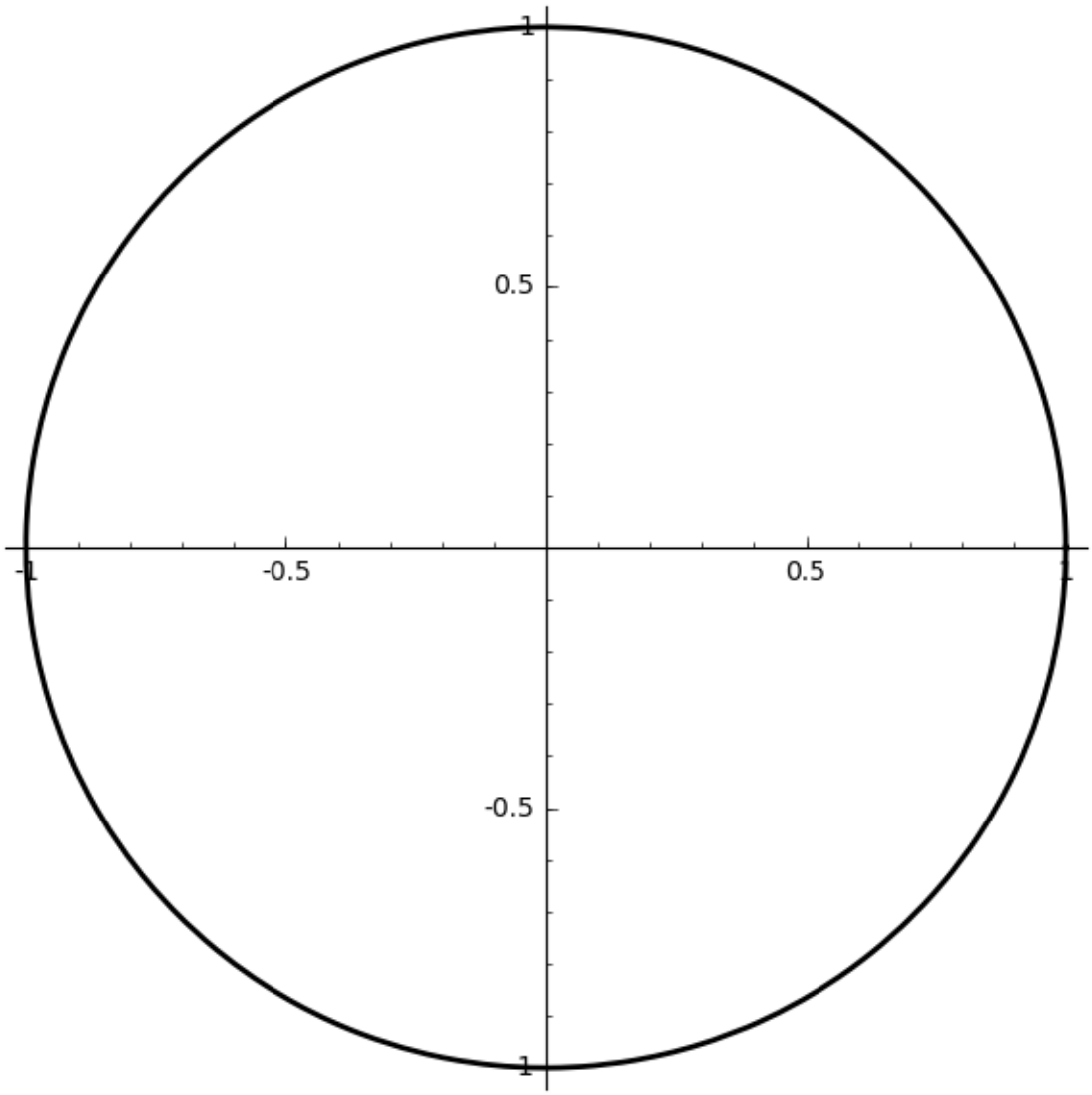
In [5]:
```
parametric_plot((3*x^3+2*x^2-x-1,3*x^2+2*x+1),(x,-1.5,1),color='black',thickness=2)
```

Out[5]:



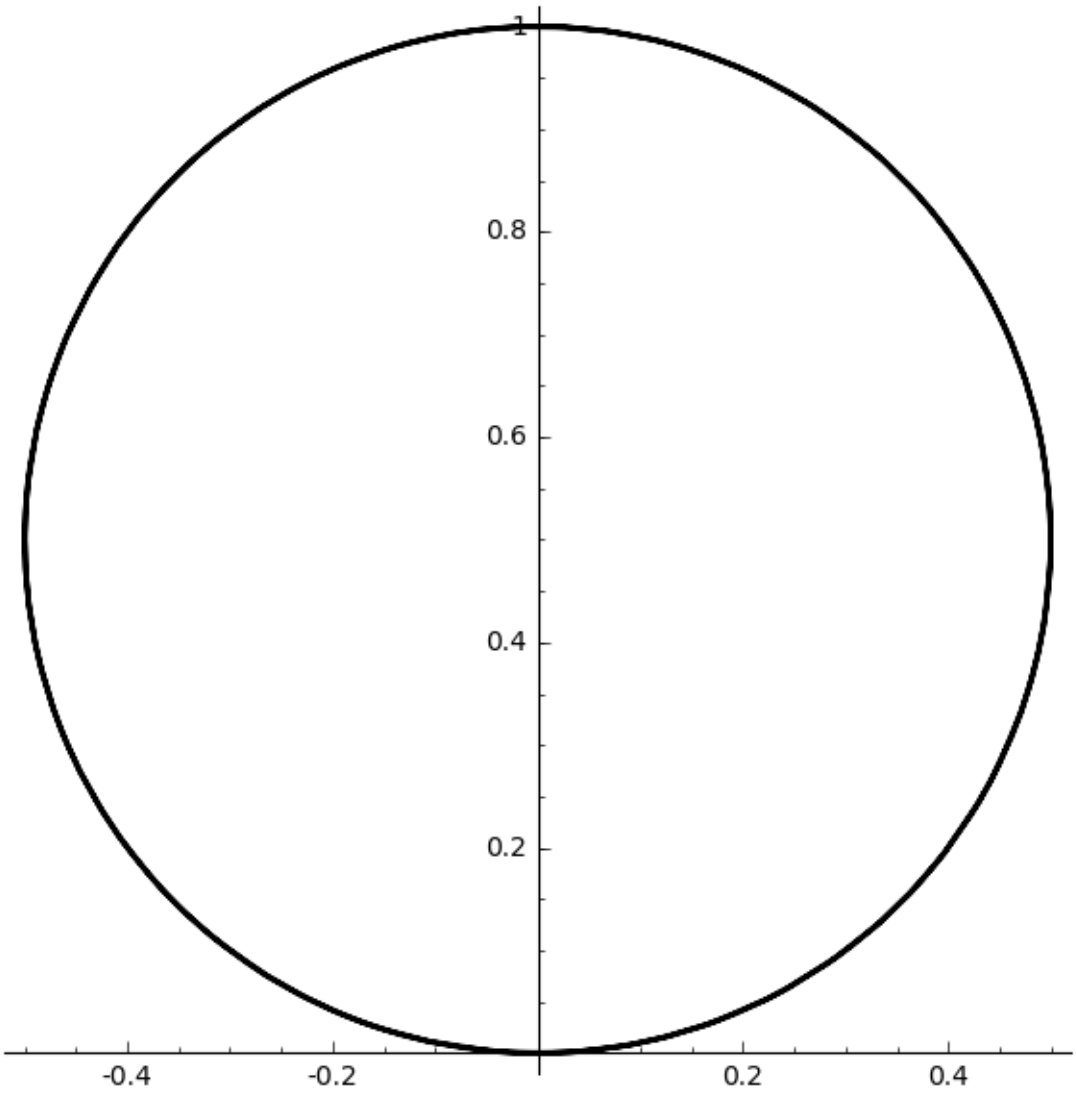
In [12]:
```
polar_plot(1,(x,0,2*pi),color='black',thickness=2)
```

Out[12]:



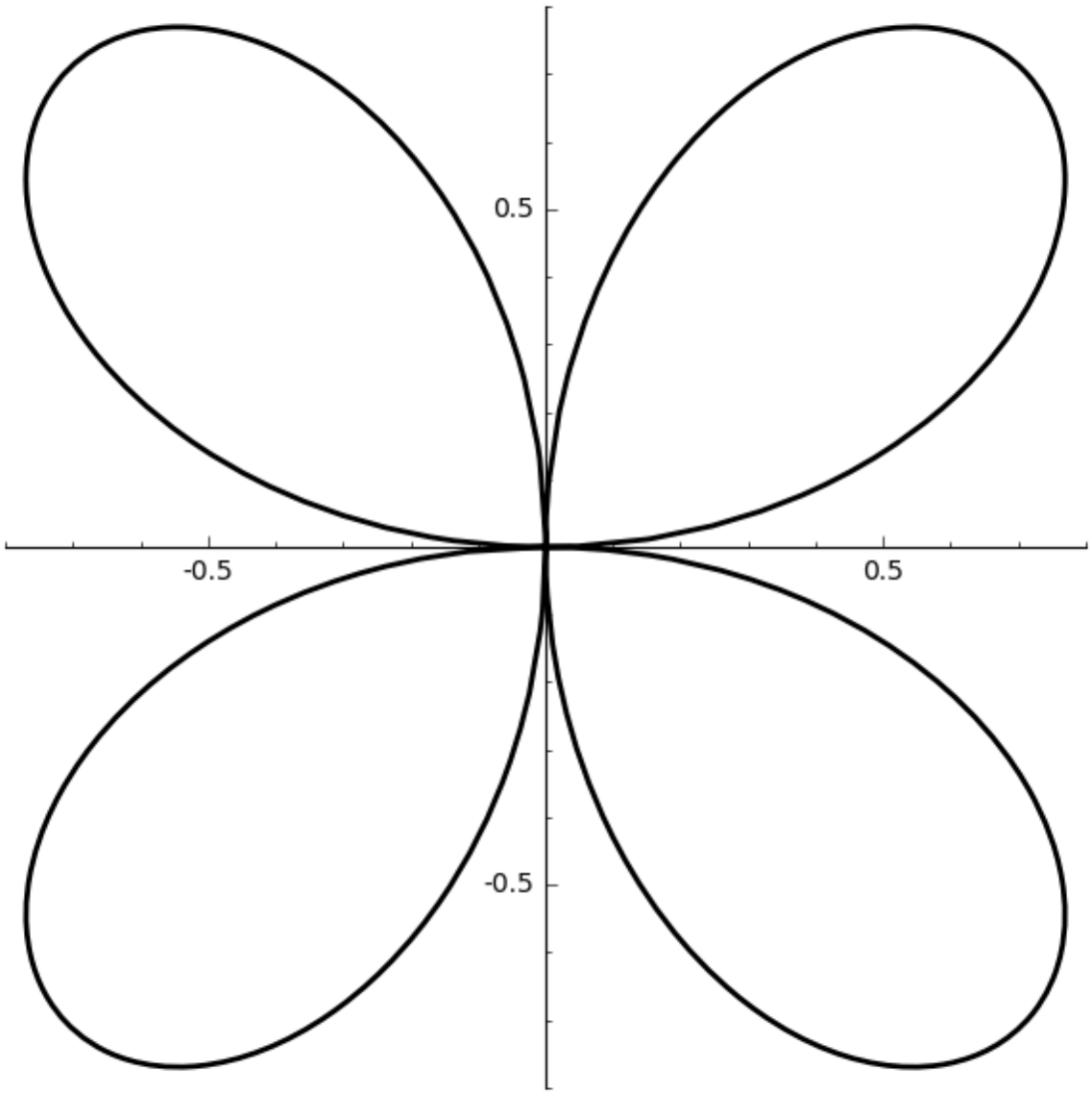
In [13]: polar_plot(sin(x),(x,0,2*pi),color='black',thickness=2)

Out[13]:



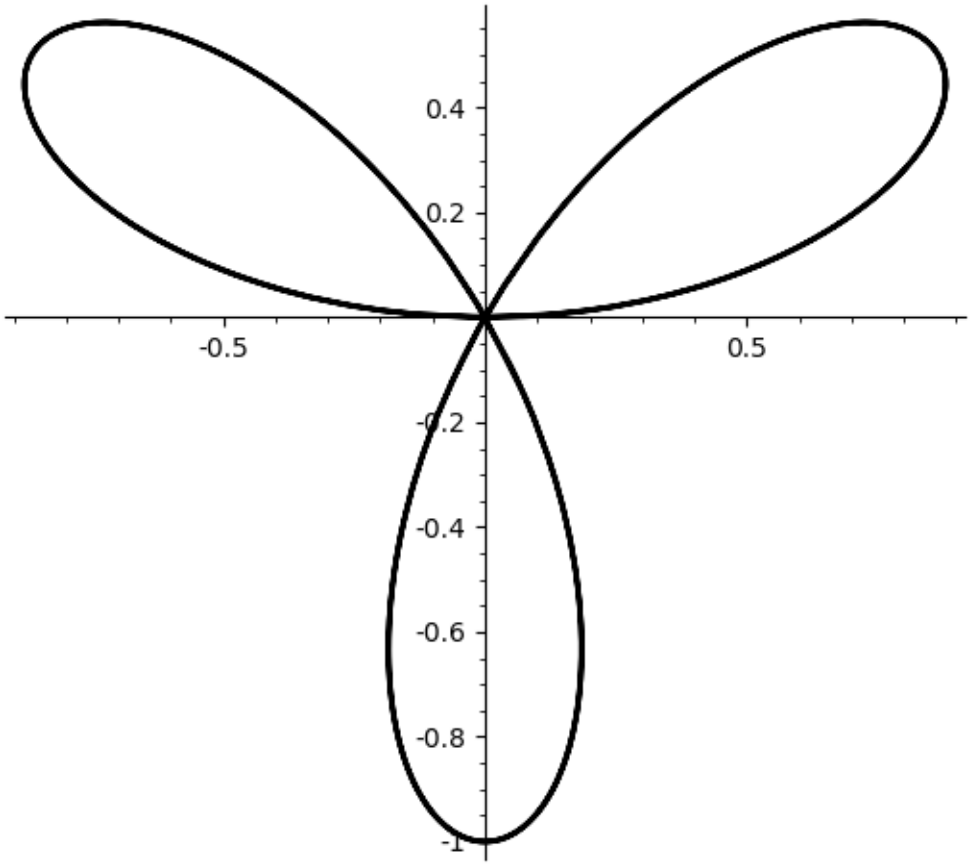

```
In [14]: polar_plot(sin(2*x),(x,0,2*pi),color='black',thickness=2)
```

Out[14]:



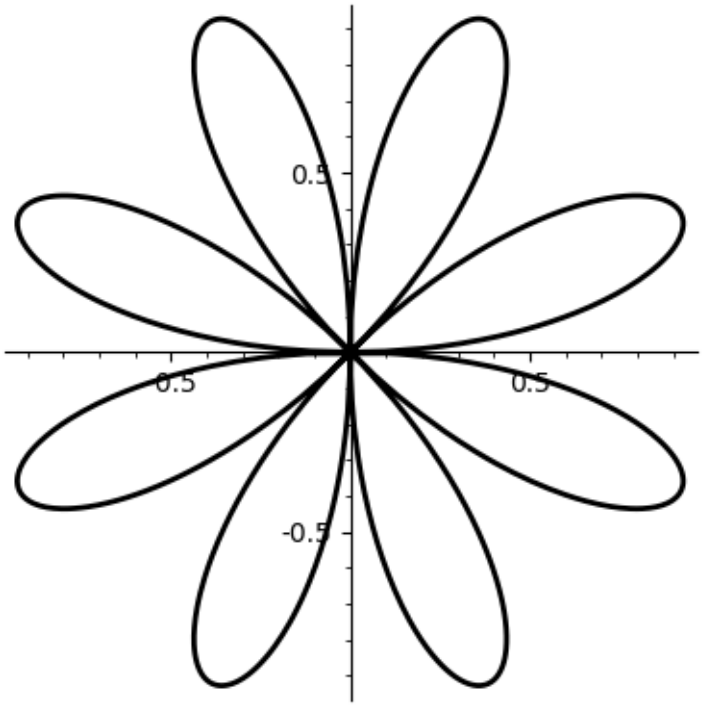

```
In [1]: polar_plot(sin(3*x),(x,0,2*pi),color='black',thickness=2)
```

Out[1]:



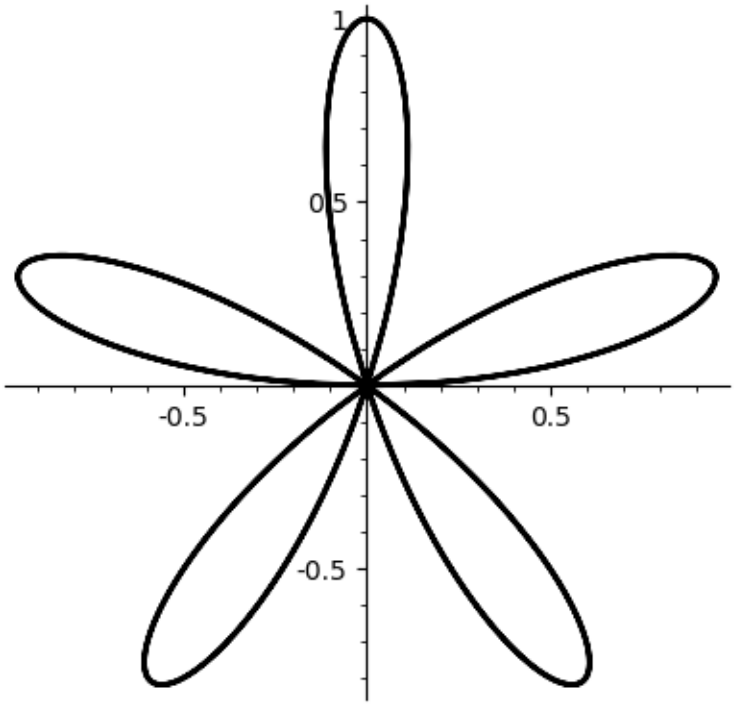

```
In [2]: polar_plot(sin(4*x),(x,0,2*pi),color='black',thickness=2)
```

Out[2]:



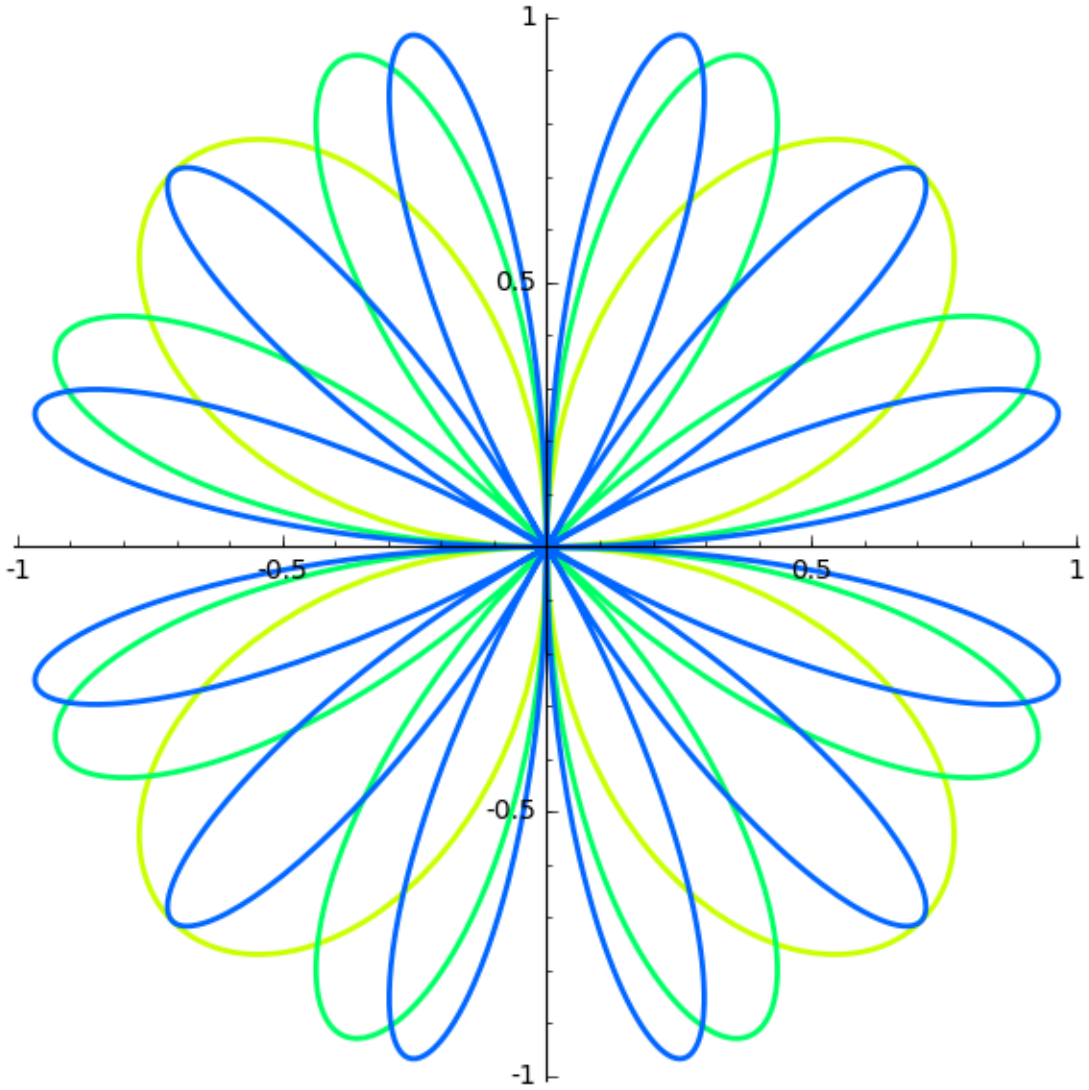

```
In [3]: polar_plot(sin(5*x),(x,0,2*pi),color='black',thickness=2)
```

Out[3]:



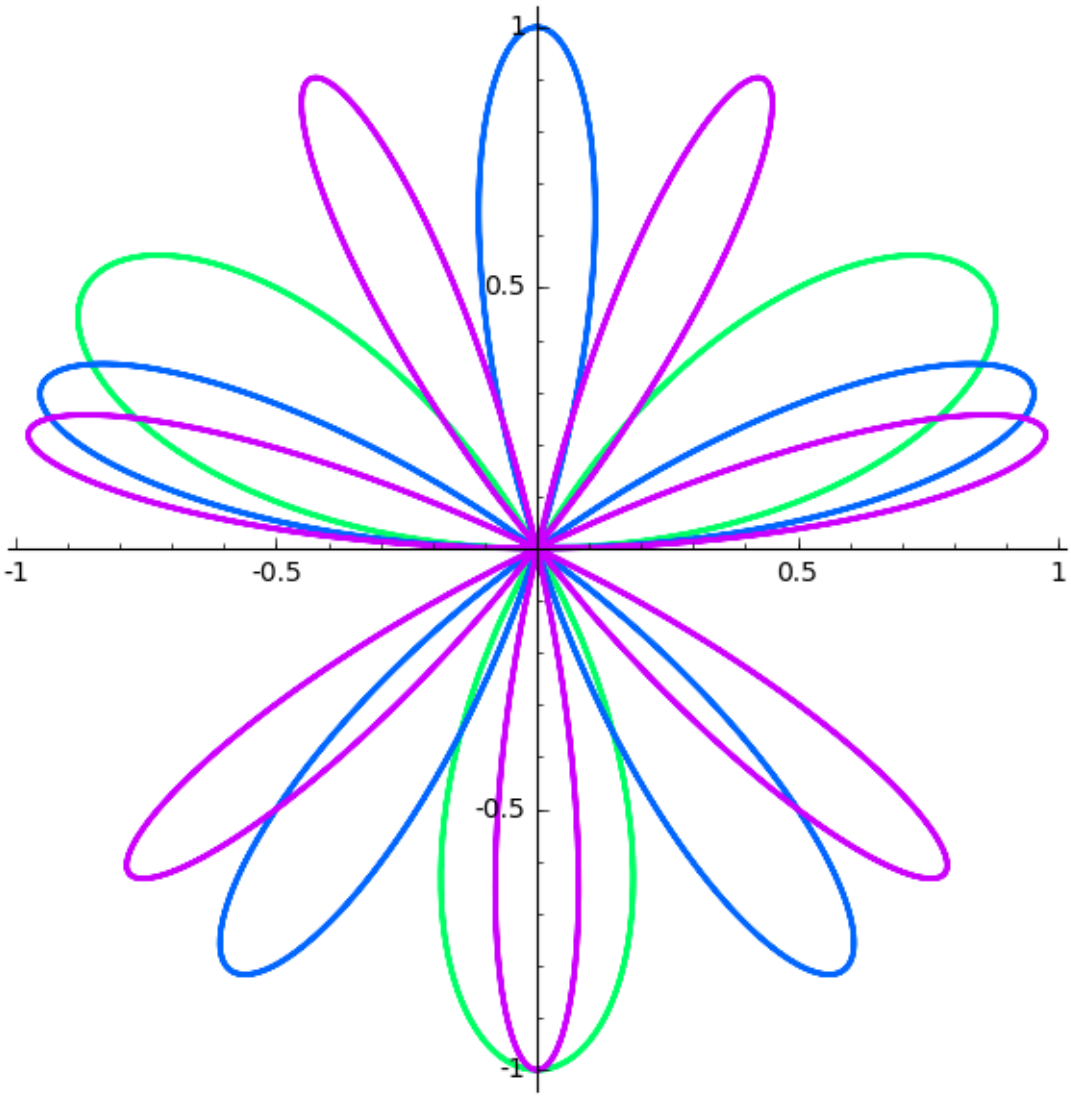
In [26]:
```
sum([polar_plot(sin(i*x),(x,0,2*pi),color=rainbow(5)[i/2],thickness=2) for i in [2,4,
```

Out[26]:



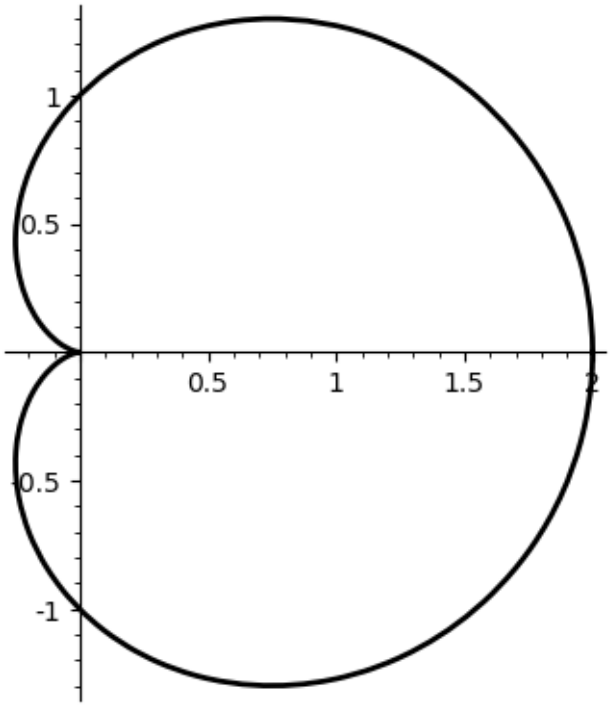
In [28]:
```
sum([polar_plot(sin(i*x),(x,0,2*pi),color=rainbow(5)[(i+1)/2],thickness=2) for i in [
```

Out[28]:



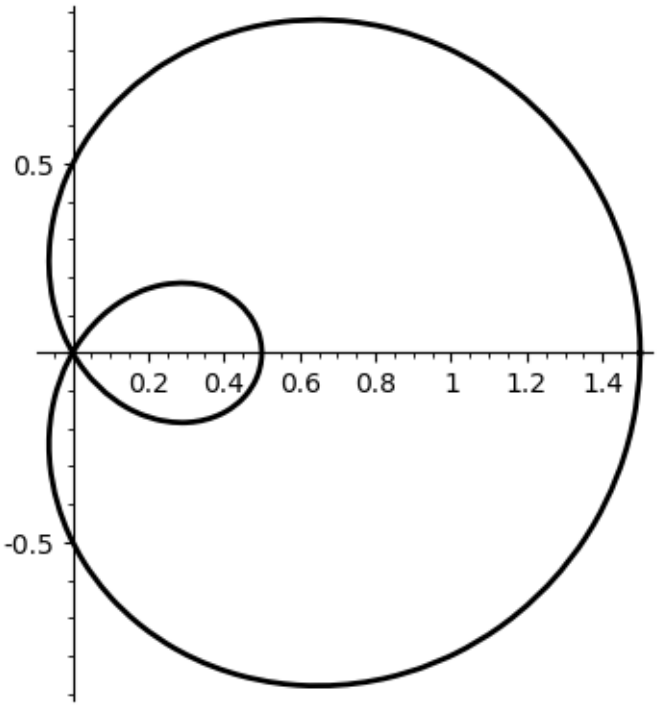

```
In [4]: polar_plot(1+cos(x),(x,0,2*pi),color='black',thickness=2)
```

Out[4]:



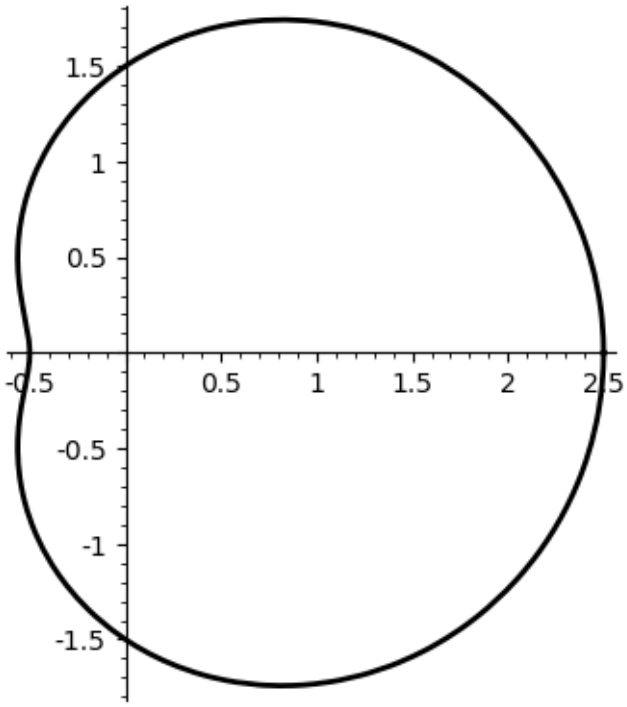
In [5]:
```
polar_plot(1/2+cos(x),(x,0,2*pi),color='black',thickness=2)
```

Out[5]:



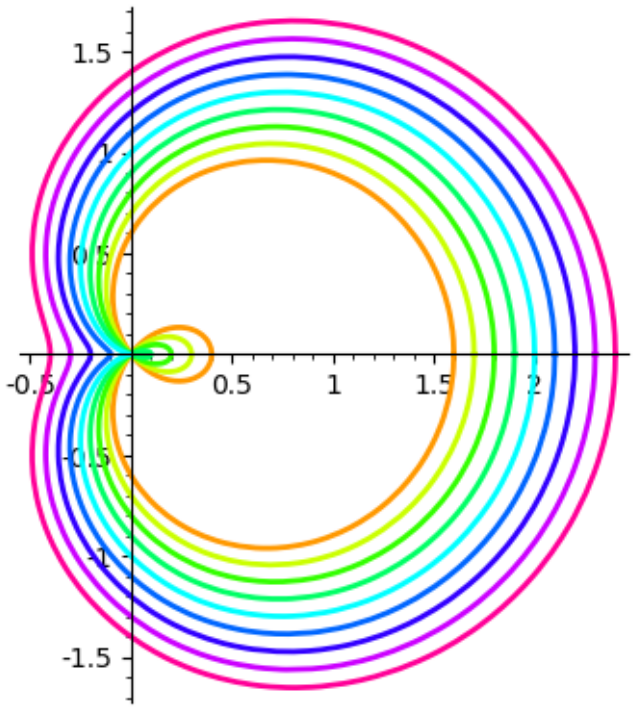
```
In [6]: polar_plot(3/2+cos(x),(x,0,2*pi),color='black',thickness=2)
```

Out[6]:



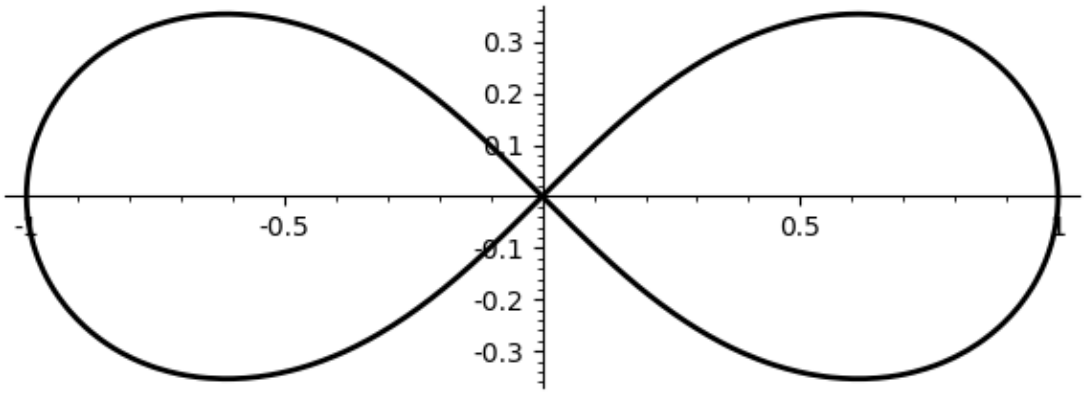

```
In [17]: sum([polar_plot(1/2+i/10+cos(x),(x,0,2*pi),color=rainbow(10)[i],thickness=2) for i in
```

Out[17]:



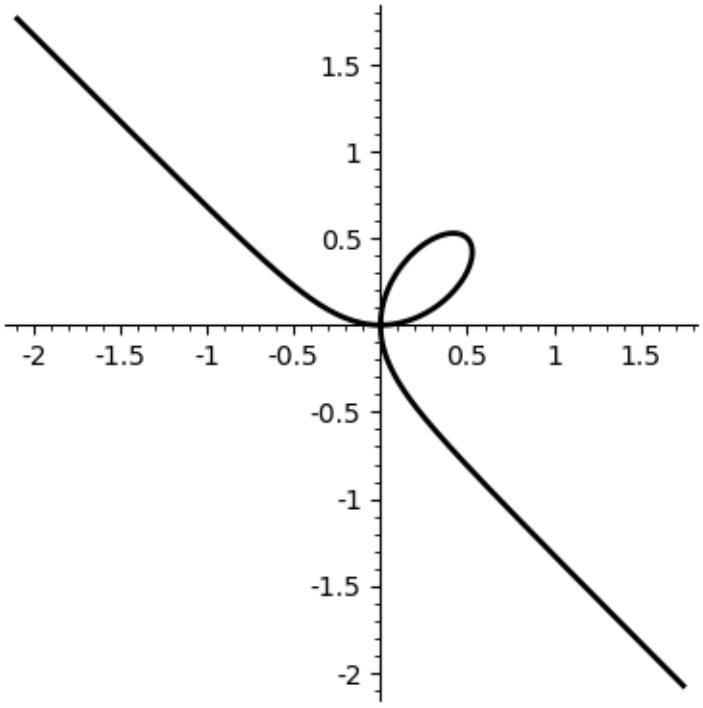
In [24]: `polar_plot(sqrt(cos(2*x)),(x,-pi/4+0.00001,pi/4-0.00001),color='black',thickness=2)+p`

Out[24]:



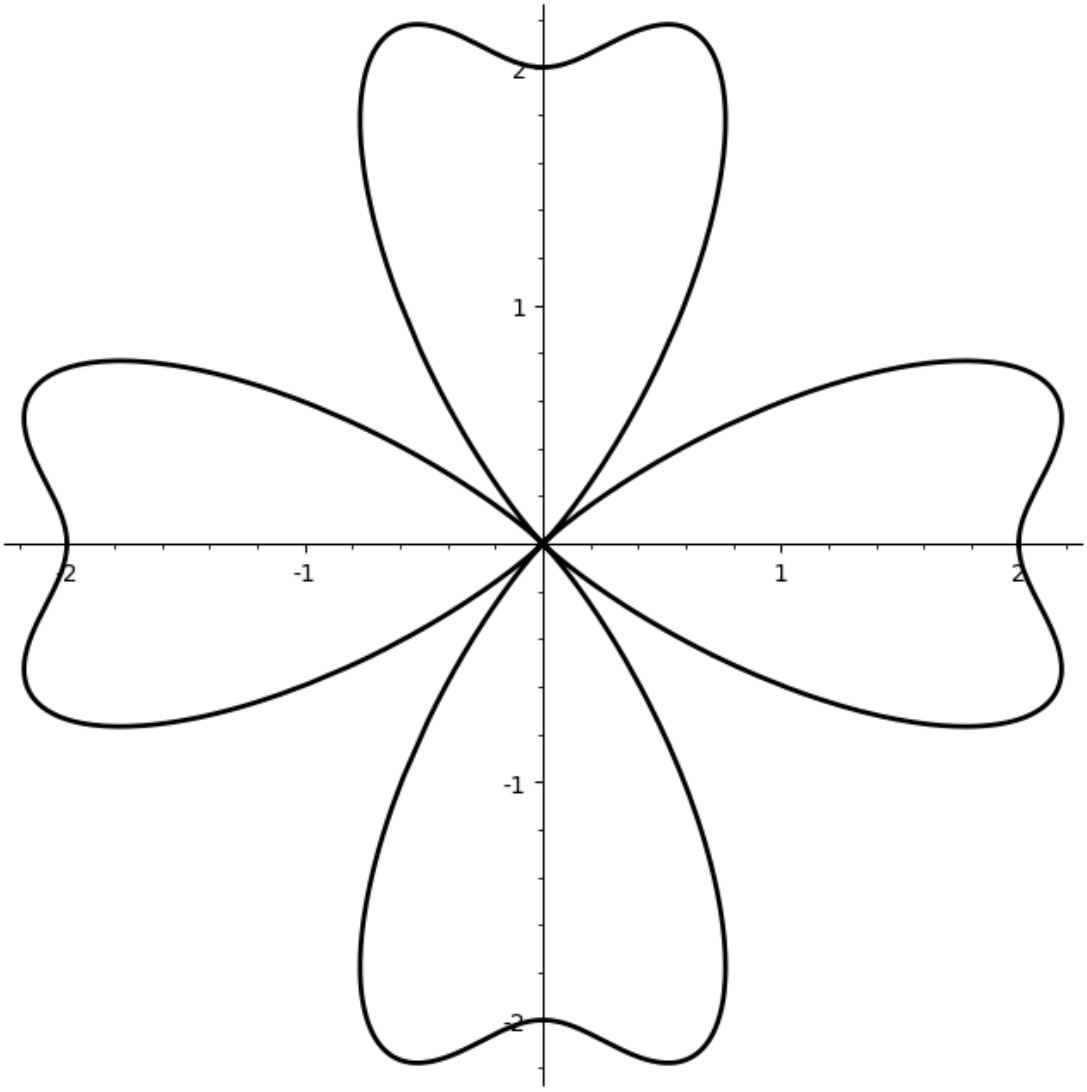
In [37]: `polar_plot((sin(x)*cos(x))/(cos(x)^3+sin(x)^3),(x,-0.7,2.27),color='black',thickness=`

Out[37]:



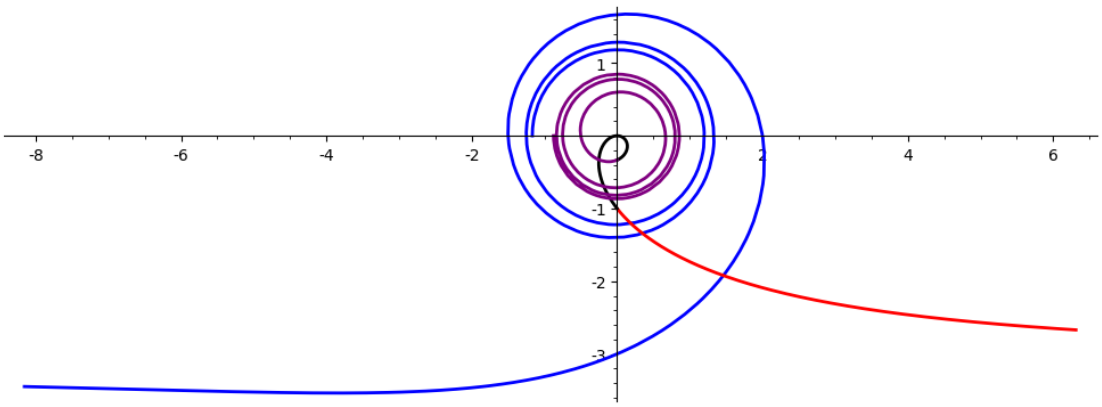

```
In [105]: polar_plot(1+cos(4*x)+sin(4*x)^2,(x,0,2*pi),color='black',thickness=2,figsize=10)
```

Out[105]:



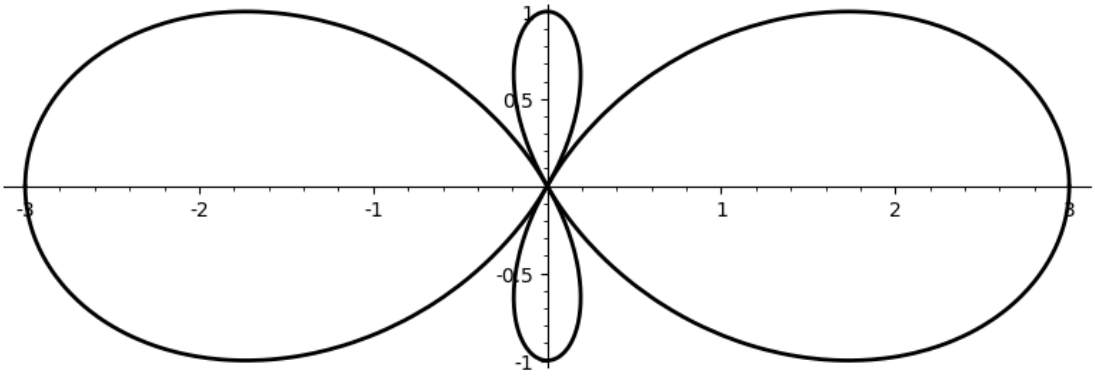
In [103]:
```
polar_plot(x/(x-pi),(x,pi+0.4,7*pi),color='blue',thickness=2)+polar_plot(x/(x-pi),(x
```

Out[103]:



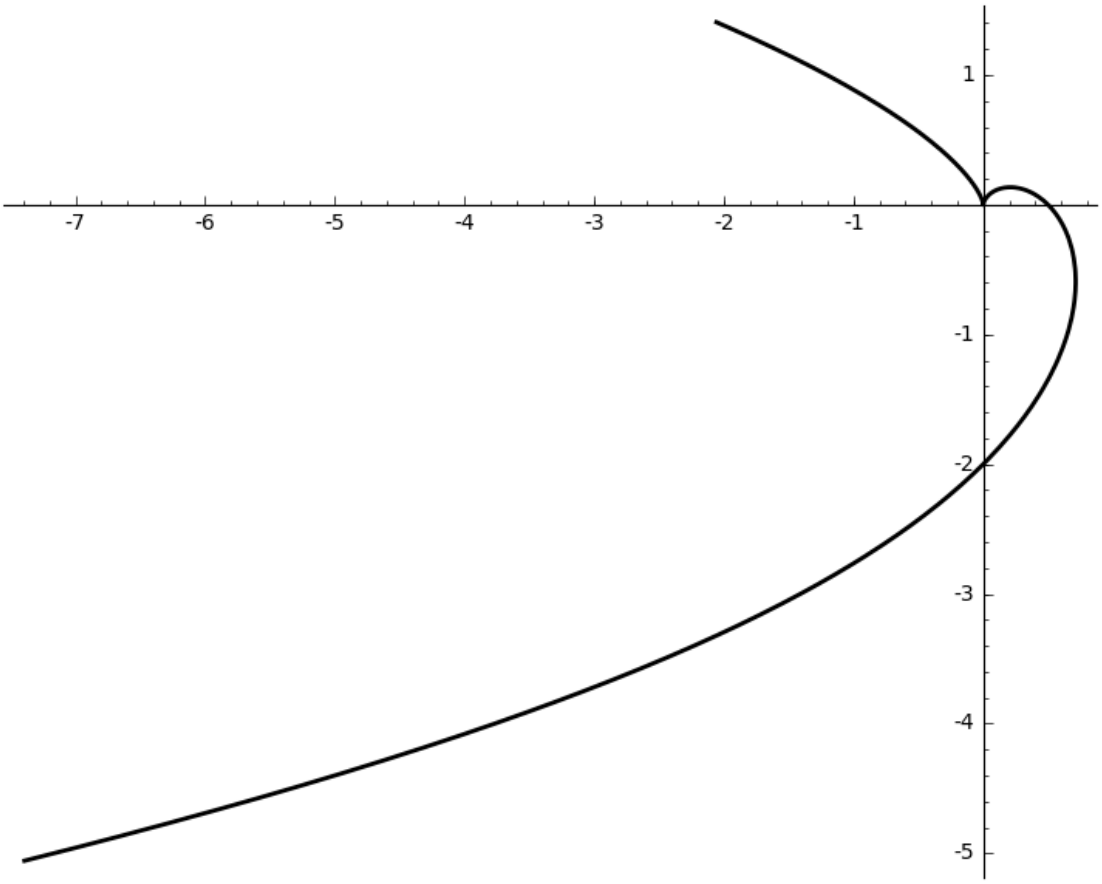
In [102]: `polar_plot(sin(3*x)/sin(x),(x,0,pi-0.0002),color='black',thickness=2)+polar_plot(sin`

Out[102]:



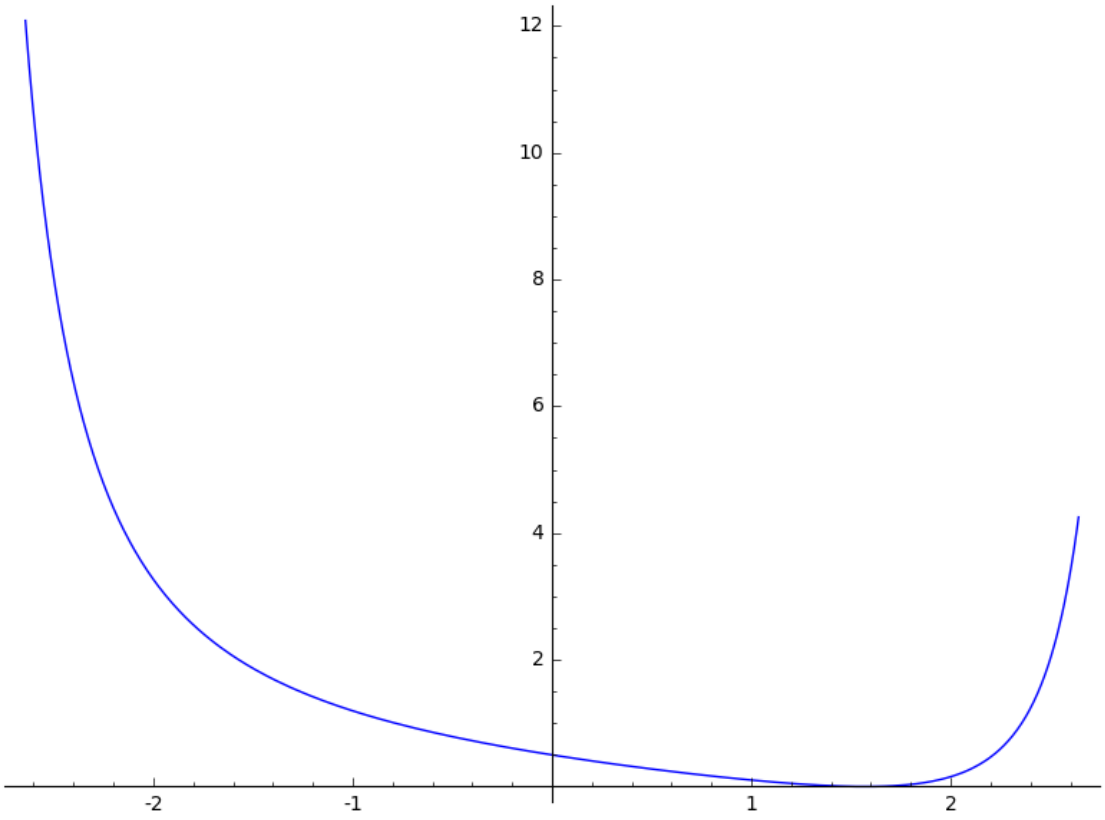
In [82]: `polar_plot((1-sin(x))/(1+cos(x)),(x,-pi+0.6,pi-0.6),color='black',thickness=2)`

Out[82]:



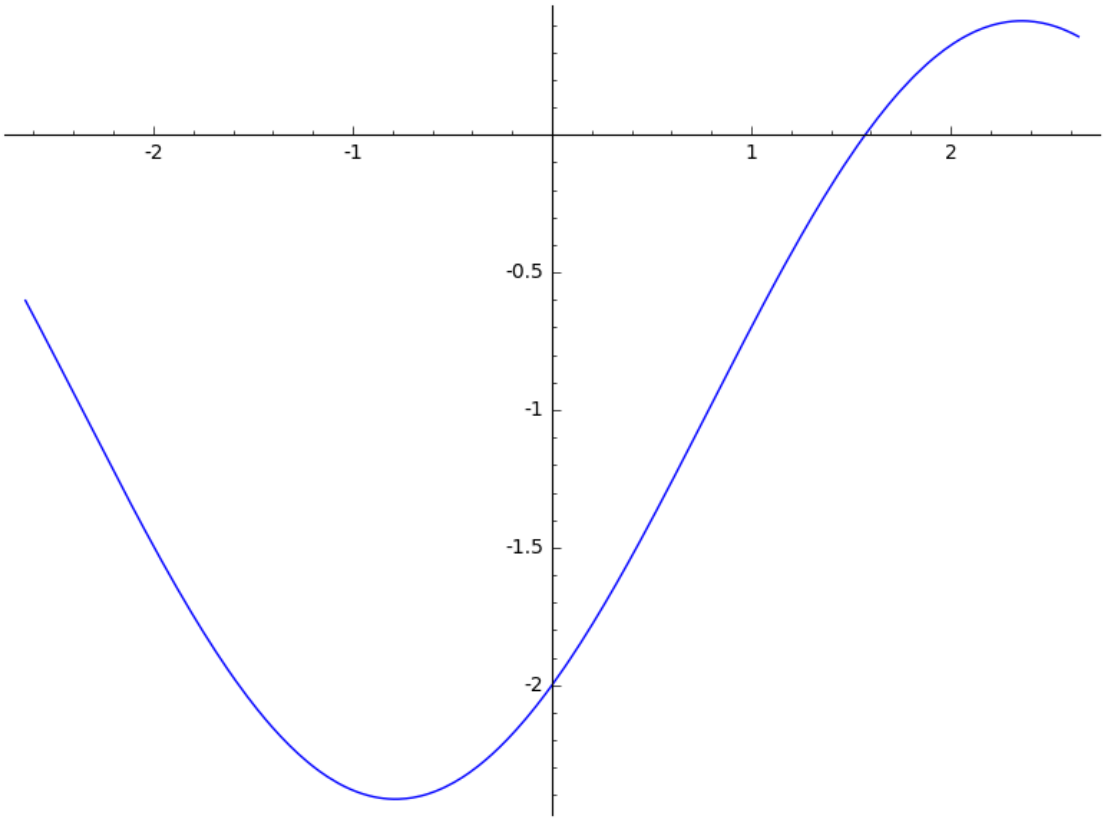
In [86]: `plot((1-sin(x))/(1+cos(x)),(x,-pi+0.5,pi-0.5))`

Out[86]:



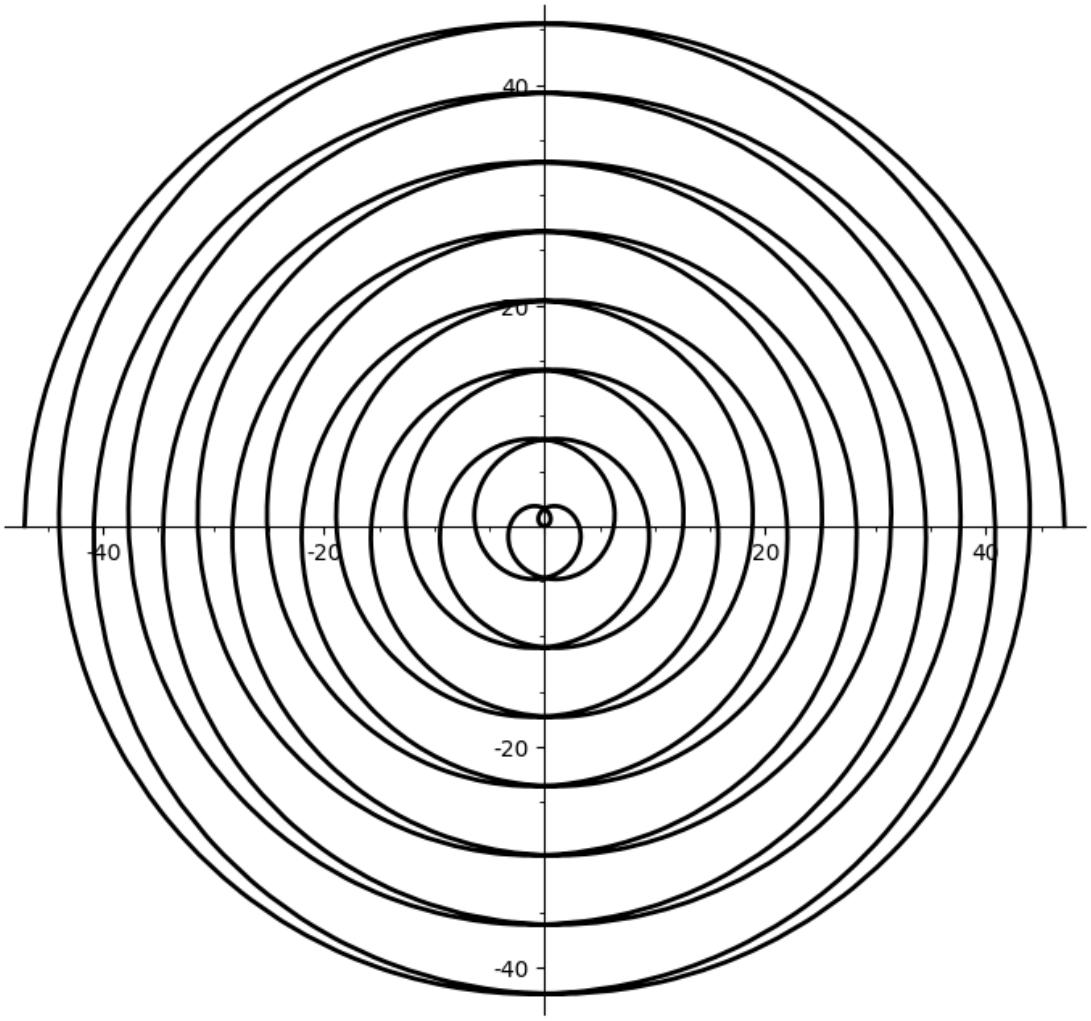

```
In [88]: plot(sin(x)-cos(x)-1,(x,-pi+0.5,pi-0.5))
```

Out[88]:



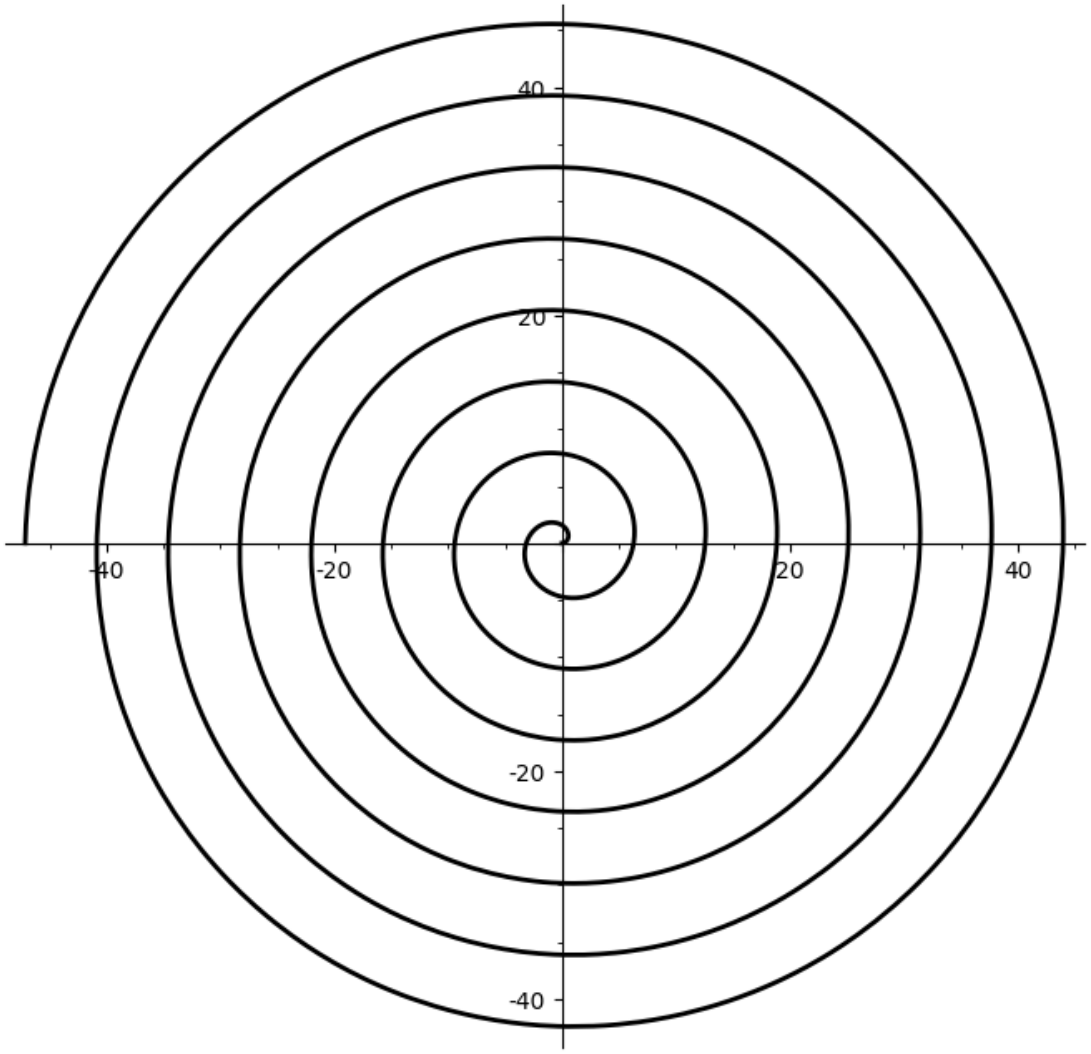

```
In [94]: polar_plot(x,(x,-15*pi,15*pi),color='black',plot_points=2000,thickness=2,figsize=10)
```

Out[94]:



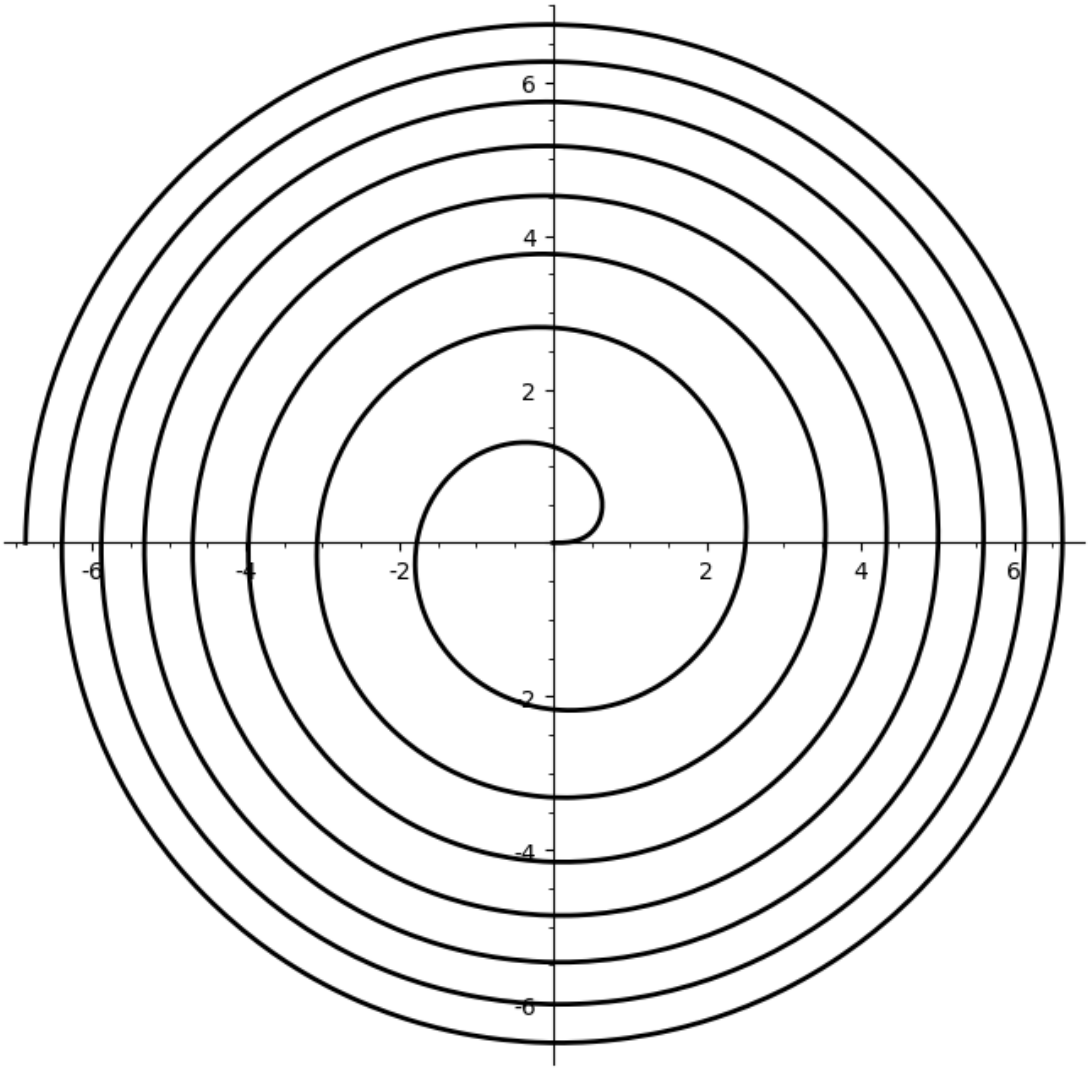

```
In [95]: polar_plot(x,(x,-15*pi,15*pi),color='black',plot_points=2000,thickness=2,figsize=10)
```

Out[95]:



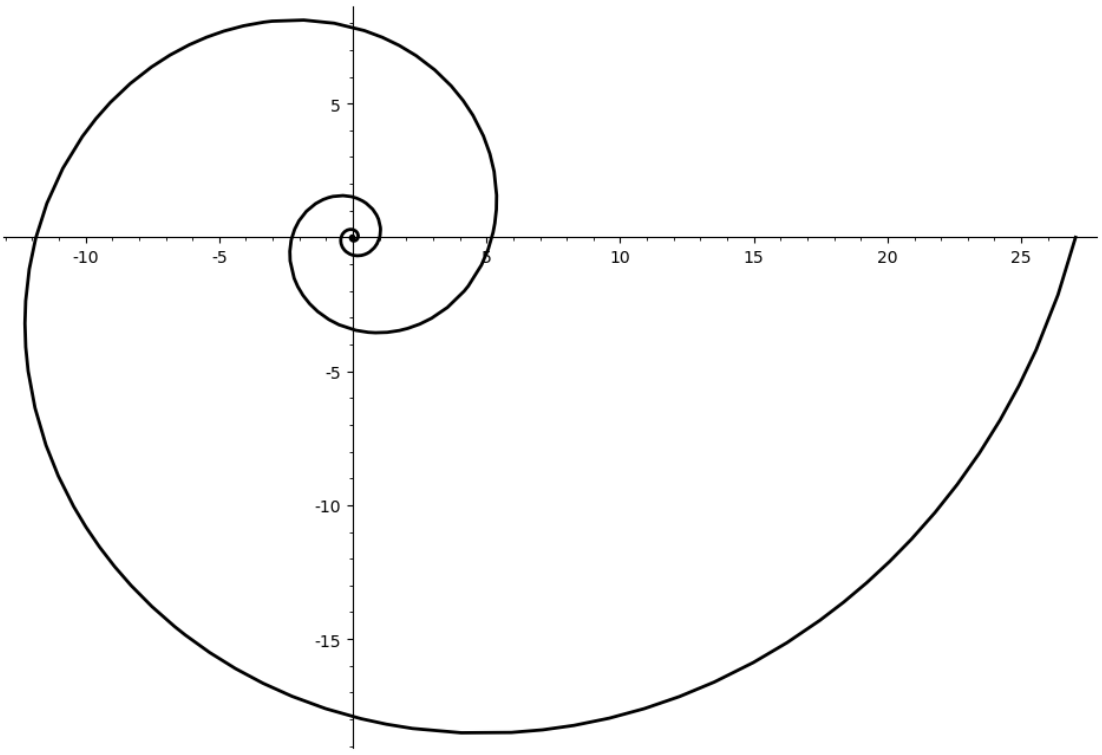

```
In [93]: polar_plot(sqrt(x),(x,0,15*pi),color='black',plot_points=2000,thickness=2,figsize=10)
```

Out[93]:

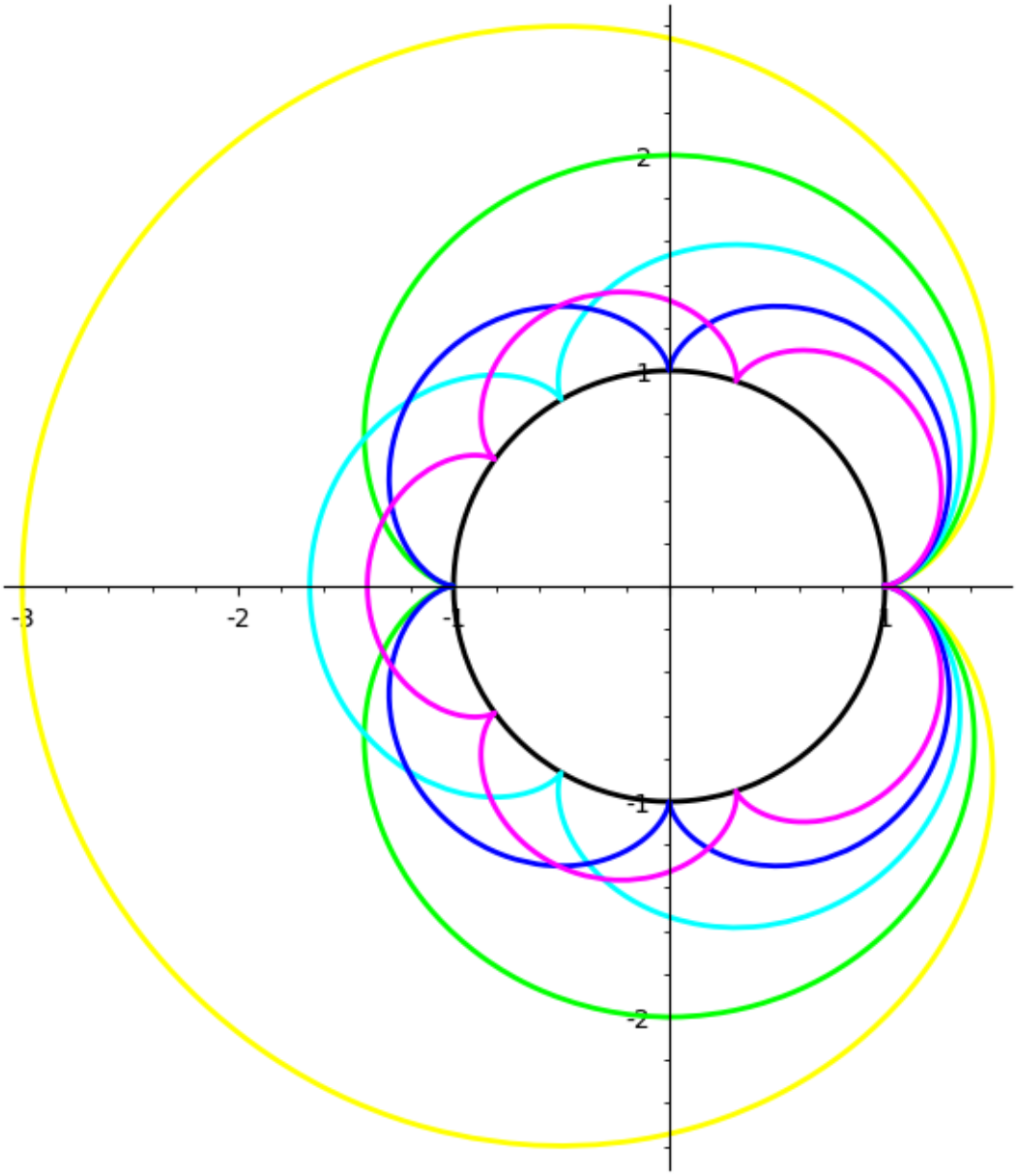


In [92]: `polar_plot(1.3^x,(x,-6*pi,4*pi),color='black',thickness=2,figsize=10)`

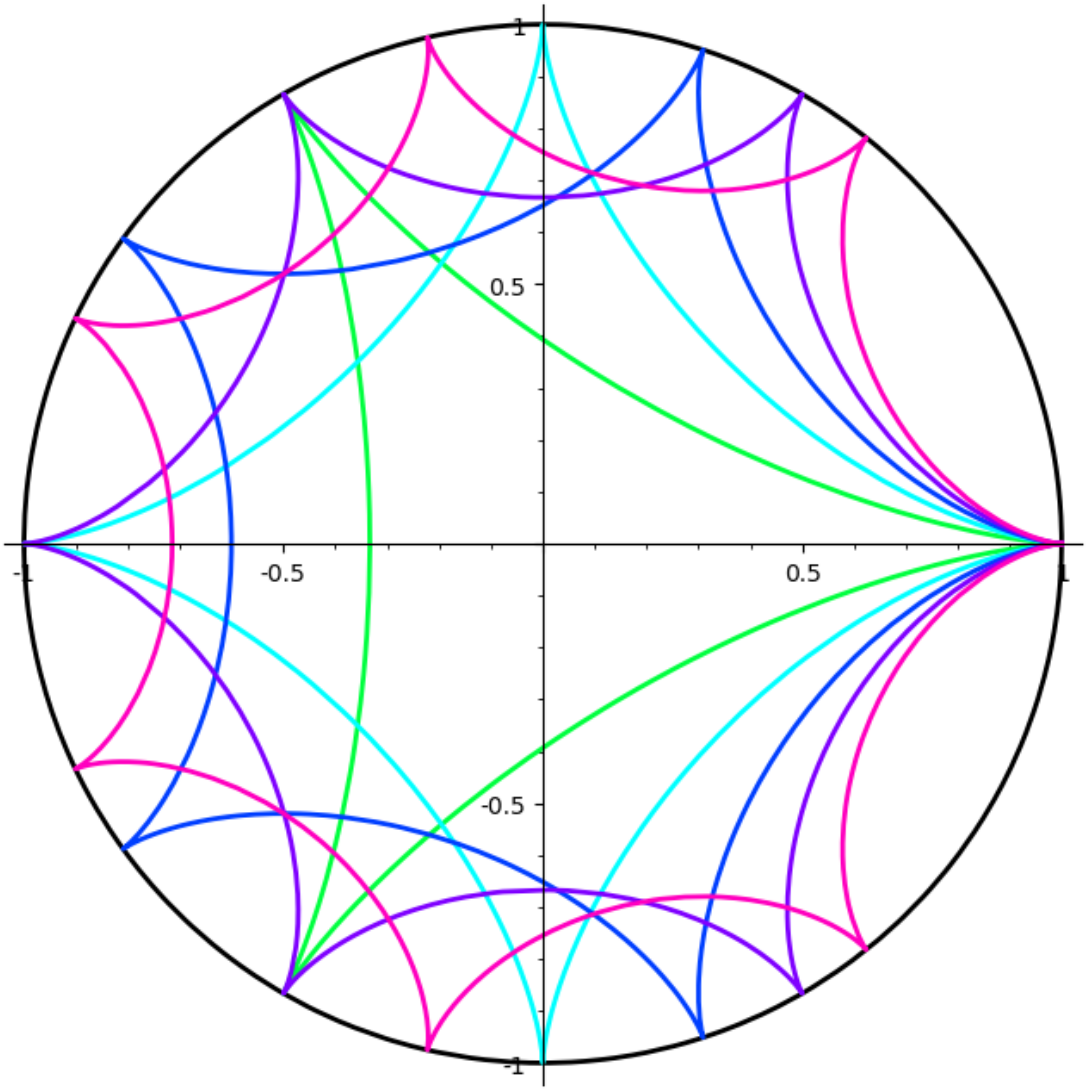
Out[92]:




```
In [91]: dessin=parametric_plot((cos(x),sin(x)),(x,0,2*pi),color='black',thickness=2)
         N=6
         for n in range(1,N):
             dessin=dessin+parametric_plot(((1/n)*((n+1)*cos(x)-cos((n+1)*x)),(1/n)*((n+1)*sin
         show(dessin,figsize=10)
```




```
In [115]: dessin=parametric_plot((cos(x),sin(x)),(x,0,2*pi),color='black',thickness=2)
          N=8
          for n in range(3,N):
              dessin=dessin+parametric_plot(((1/n)*((n-1)*cos(x)+cos((n-1)*x)),(1/n)*((n-1)*si
          show(dessin,figsize=10)
```



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