ANAUE05-Exercise 18

November 16, 2018

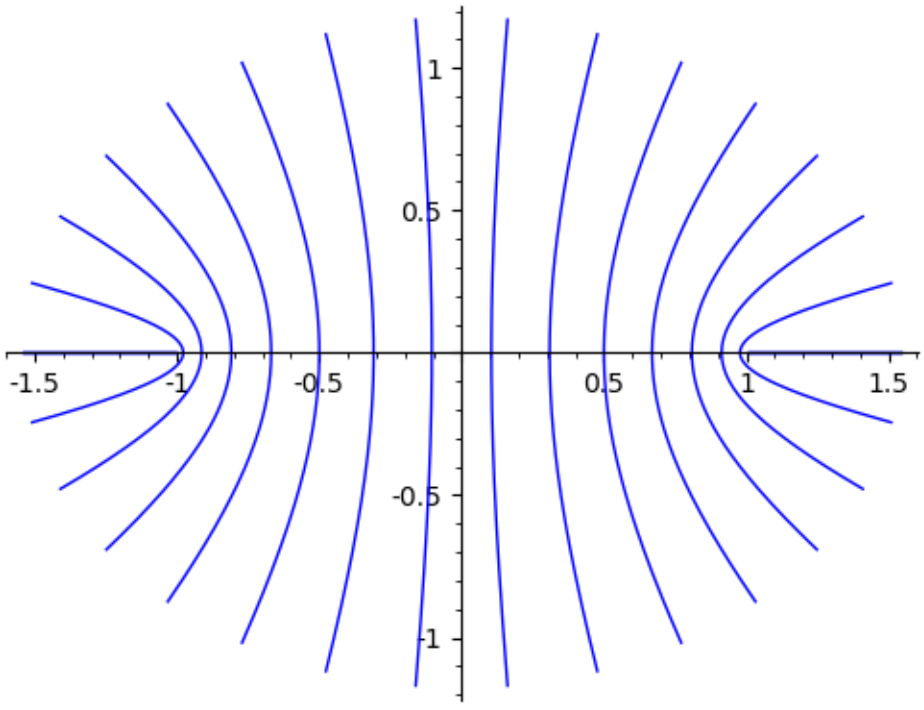
In [171]:
```
import numpy
pretty_print_default(True)

var('u, v')
Phi(u,v) = ((cosh(u) * cos(v)), (sinh(u) * sin(v)))
Phi
```

Out[171]: $(u, v) \mapsto (\cos(v)\cosh(u), \sin(v)\sinh(u))$

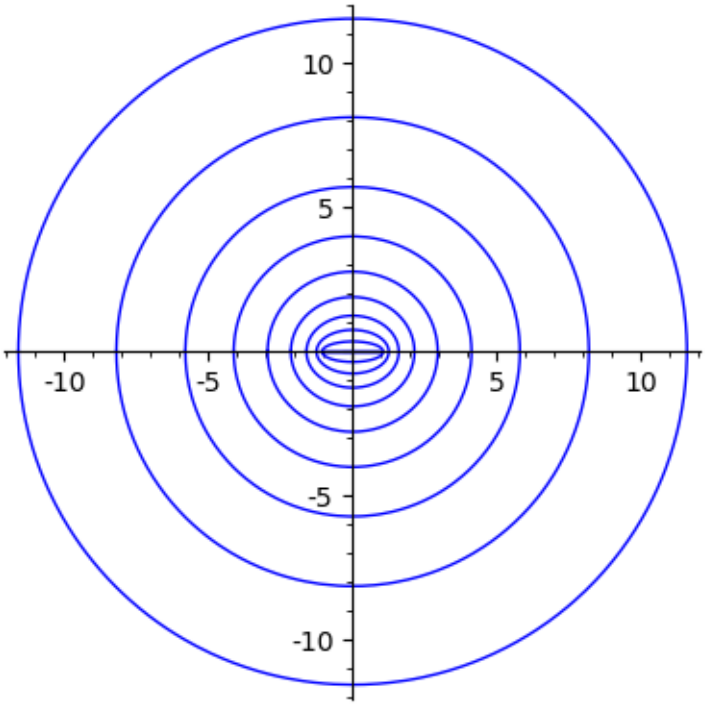
In [156]:
```
p = []
for i in numpy.linspace(0, numpy.pi, 16):
    p.append(parametric_plot( Phi.subs(v = i), (u,-1,1)))
sum(p)
```

Out[156]:



In [147]:
```
p = []
for i in numpy.linspace(0, numpy.pi, 10):
    p.append(parametric_plot( Phi.subs(u = i), (v,-numpy.pi,numpy.pi)))
sum(p)
```

Out[147]:

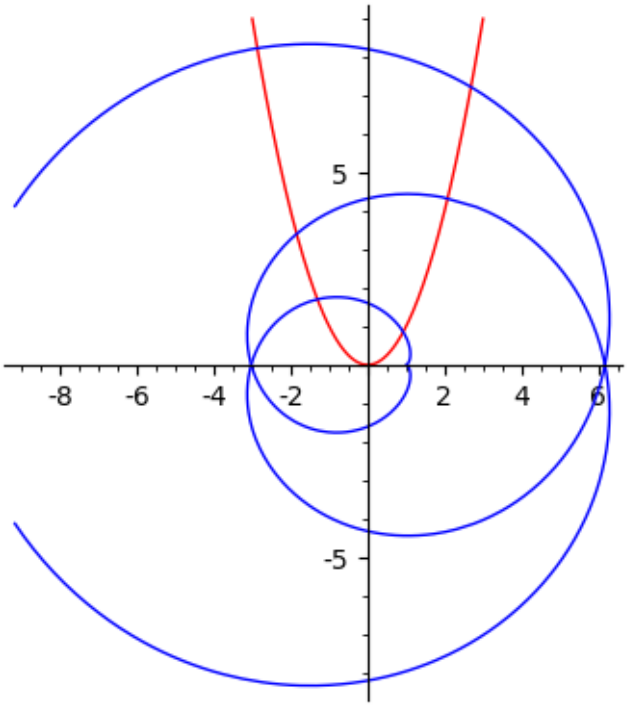


In [170]:
```
var('x')
q(x) = (x, x**2)
q

N = 3;

plot = parametric_plot(q, (x, -N,N), color='red')
plot + parametric_plot(Phi(*q(x)), (x, -N,N))
```

Out[170]:

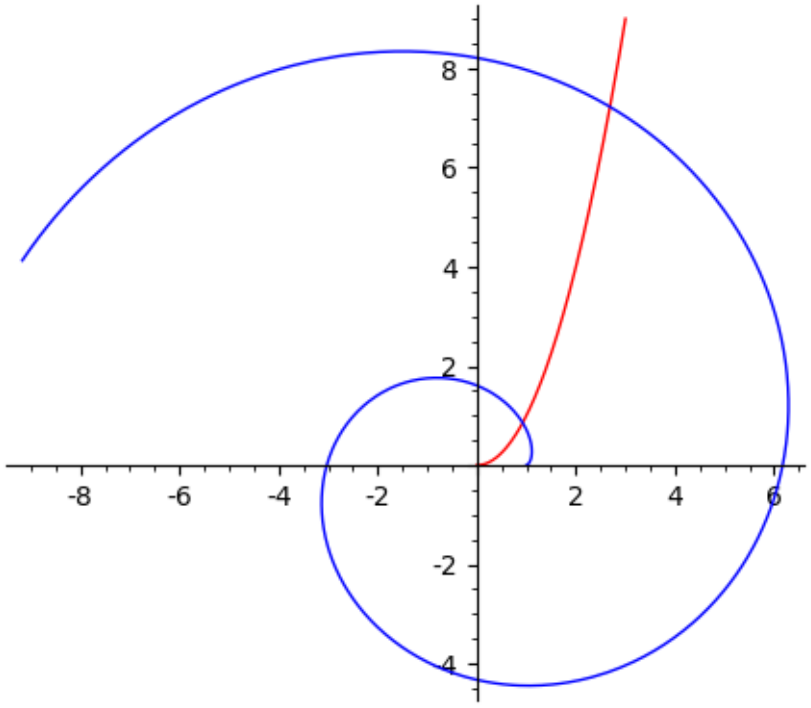


In [169]:
```
var('x')
q(x) = (x, x**2)
q

N = 3;

plot = parametric_plot(q, (x, 0,N), color='red')
plot + parametric_plot(Phi(*q(x)), (x, 0,N))
```

Out[169]:

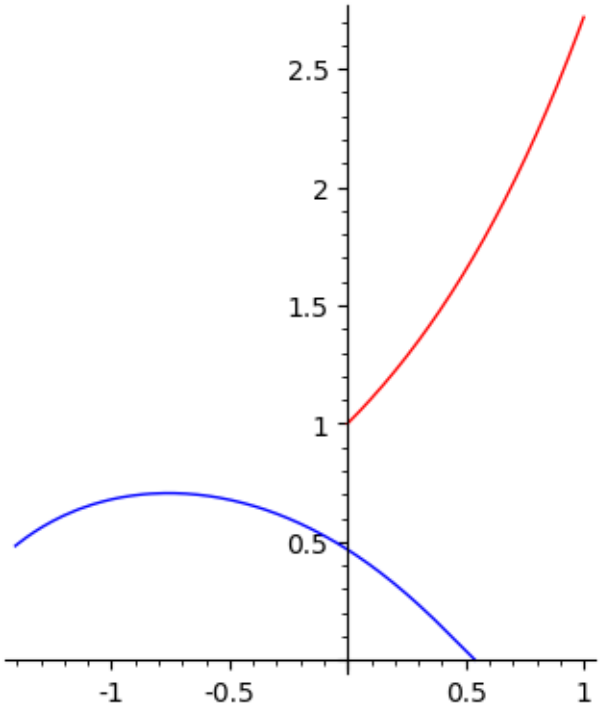


In [175]:
```
q(x) = (x, e^x)
q

N = 1;

plot = parametric_plot(q, (x, 0,N), color='red')
plot + parametric_plot(Phi(*q(x)), (x, 0,N))
```

Out[175]:


2.5
2
1.5
1
0.5
-1
-0.5
0.5
1