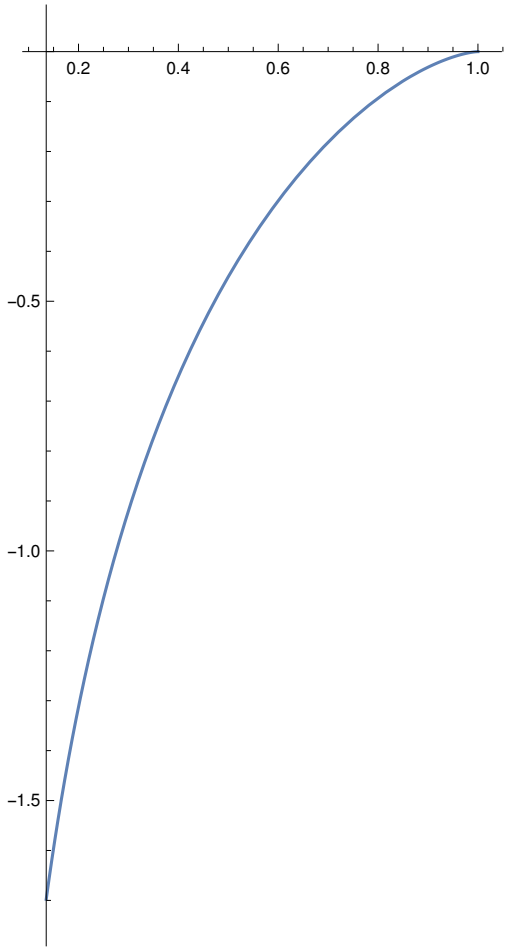
In[36]:=
```
x1[t_] := Exp[t]
z1[t_] := NIntegrate[Sqrt[1 - Exp[2 s]], {s, 0, t}]
```

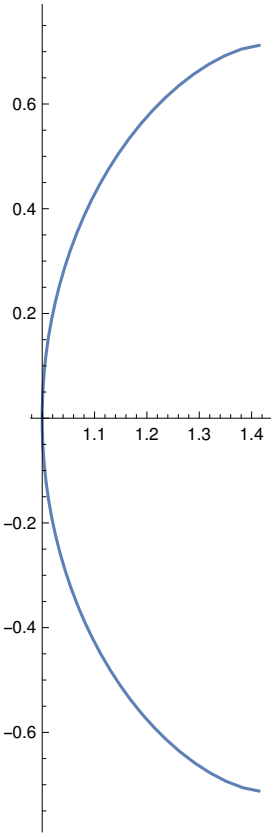
In[39]:=
```
ParametricPlot[{x1[t], z1[t]}, {t, -2, 0}]
```

Out[39]=



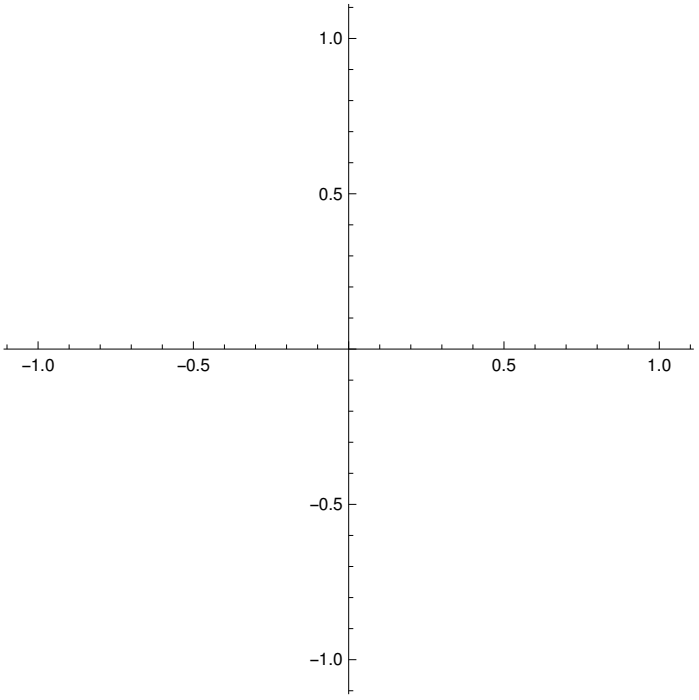
In[76]:=
```
x2[t_] := Cosh[t]
z2[t_] := NIntegrate[Sqrt[1 - Sinh[s]^2], {s, 0, t}]
ParametricPlot[{x2[t], z2[t]}, {t, -100, ArcSinh[1]}]
```

Out[78]=



In[94]:=
```
x3[t_] := Sinh[t]
z3[t_] := NIntegrate[Sqrt[1 - Cosh[s]^2], {s, 0, t}]
ParametricPlot[{x3[t], z3[t]}, {t, -10, ArcCosh[1]}]
```

Out[96]=



I cant get this to graph for some reason. I think Something's wrong. I also am not sure how to show the first curve (graph 1) is the same as the final curve (the tactrix) for question (3).

In[97]:=
```
Tx[t_] := Sin[t]
Tz[t_] := Cos[t] + Log[Tan[t / 2]]
ParametricPlot[{Tx[t], Tz[t]}, {t, π / 2, π}]
```

Out[99]=