

Paraboloid

Parabola

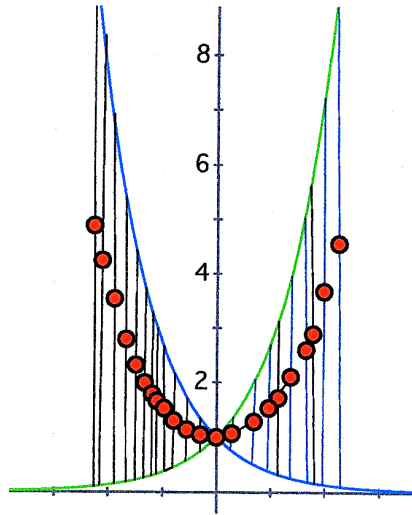
Hyperbola

6

The Catenary's Exponential Parents

www.magicmathworks.org/geomlab6

e^{-x} is the image of e^x in the y-axis.
Take the semi-silvered mirror and mark ordinate midpoints:



Connect to make the curve with equation $y = \frac{e^x + e^{-x}}{2}$,

the catenary, (which is to the hyperbola what the cosine curve is to the circle).

Ellipse

Line

Hyperboloid

Hyperbolic paraboloid

Sphere

Line pair

Cone

Sine curve

Cylinder

Tratrix

Circle

Exponential curve

Line family

Catenary

Loxodrome

Catenoid

Equiangular spiral

Helix

Archimedean spiral

Helicoid

Tiling

Plane

Polyhedron

Polygon

Cosine (cos) v. Hyperbolic cosine (cosh)

