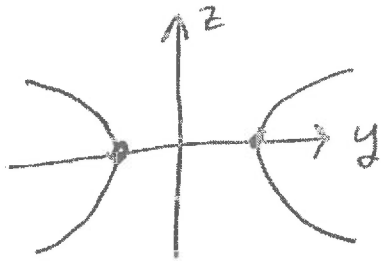
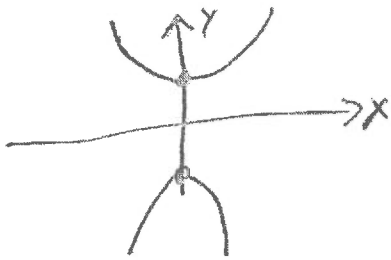


Fall 2019 Exam 2 Problem 3 Math 241

Describe, graph, name $y^2 - x^2 - z^2 = 1$ in 3-space
 when $x=0$, the graph of $y^2 - z^2 = 1$ is a hyperbola



when $z=0$, the graph of $y^2 - x^2 = 1$ is a hyperbola

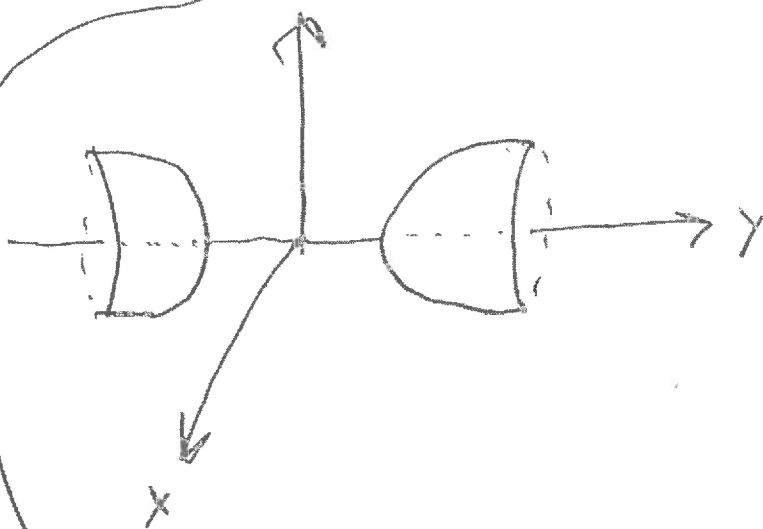


There is no graph when $-1 < y < 1$

when $y = -1$ or 1 , the graph is a point

when $y < -1$ or $1 < y$ is constant the graph is the circle

$$(\text{constant})^2 - 1 = x^2 + z^2$$



Hyperboloid of 2 Sheets.

Draw the hyperbola $y^2 - z^2 = 1$ in the yz -Plane. Now rotate the picture about the y -axis