

Recap

for Euclidean disk of radius r :

$$\text{Area} \sim r^2$$

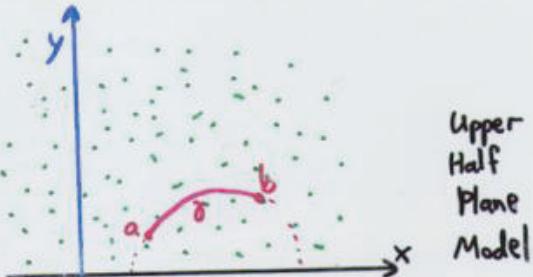
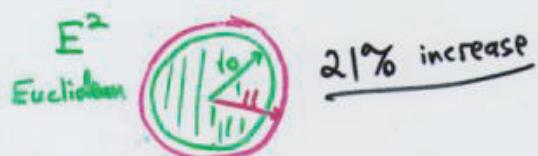
For hyperbolic disk of radius r :

$$\text{Area} \sim e^r$$

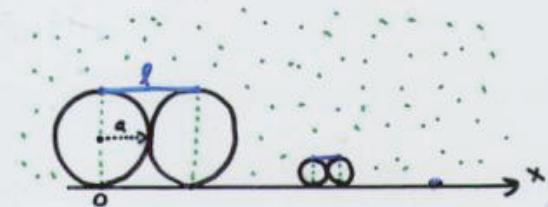
Exponential Growth!

Disk of radius 10, increase radius by 1.

% increase in area of disk?

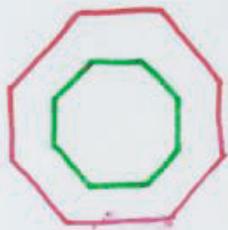


$$d_H(a, b) = \int_a^b \frac{ds}{y}$$



$$d_H(1, -1) = \int_0^2 \frac{ds}{y} = \int_0^2 \frac{dx}{2x} = \frac{1}{2} = 1$$

In Euclidean space, can scale things up and down.



In hyperbolic space, scale is fixed!

