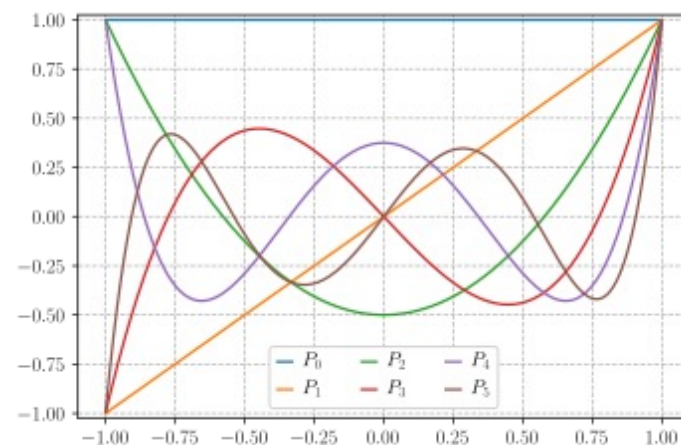
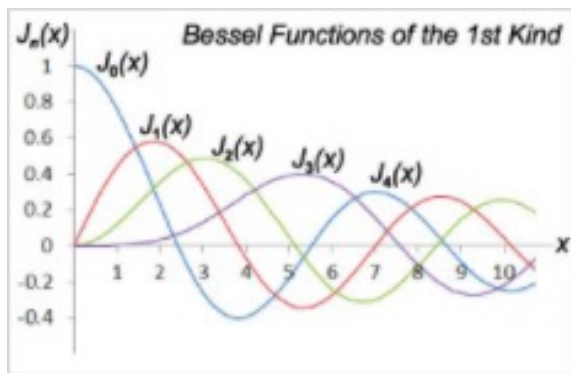
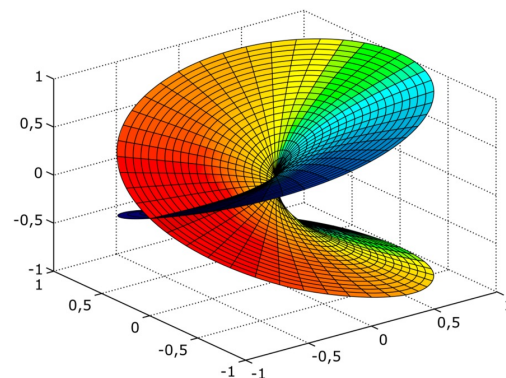
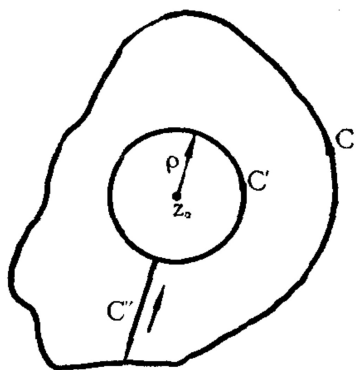




数学物理方法

多值函数的 单值化与黎曼面



黄发朋

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数学对话录

(匈牙利) 阿尔弗雷德·雷尼 (Alfréd Rényi) 著
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If I feel unhappy, I do mathematics
to become happy. If I am happy, I do
mathematics to keep happy.

— *Alfred Renyi* —

AZ QUOTES

If I feel uncomfortable, I do mathematics to become comfortable. If....

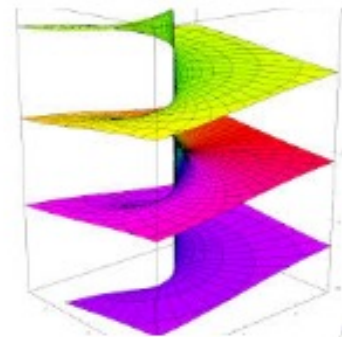
$$\int_0^{2\pi} \frac{\cos(3\theta)}{5 - 4\cos(\theta)} d\theta \quad \text{Evaluate.}$$



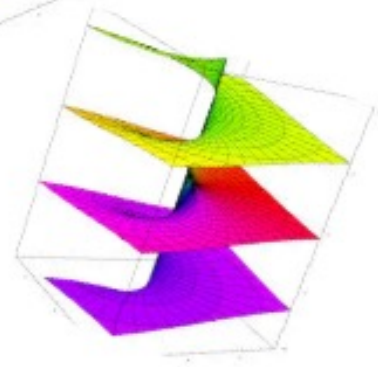
Students of Complex
Analysis

Students of Calc 2

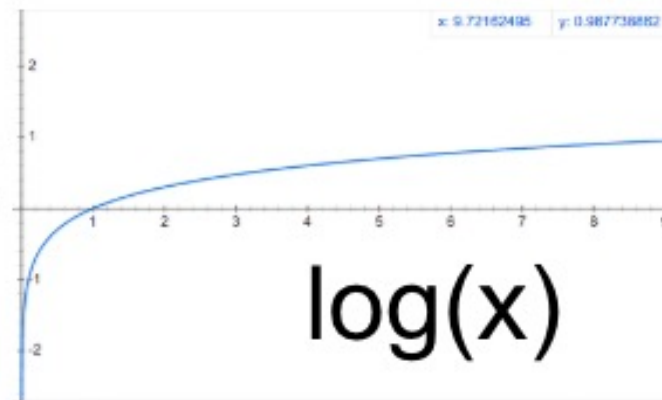
Me: Mom, can I have a $\log(z)$?



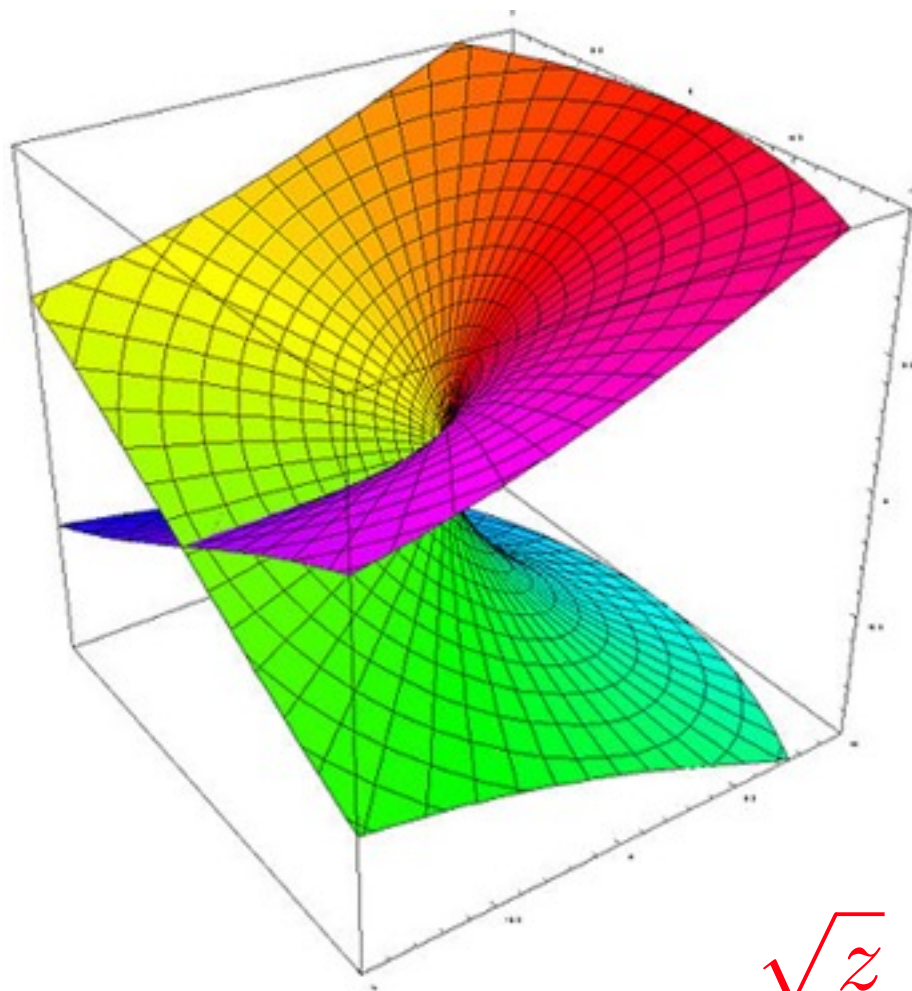
Mom: No, we have $\log(z)$ at home



$\log(z)$ at home:

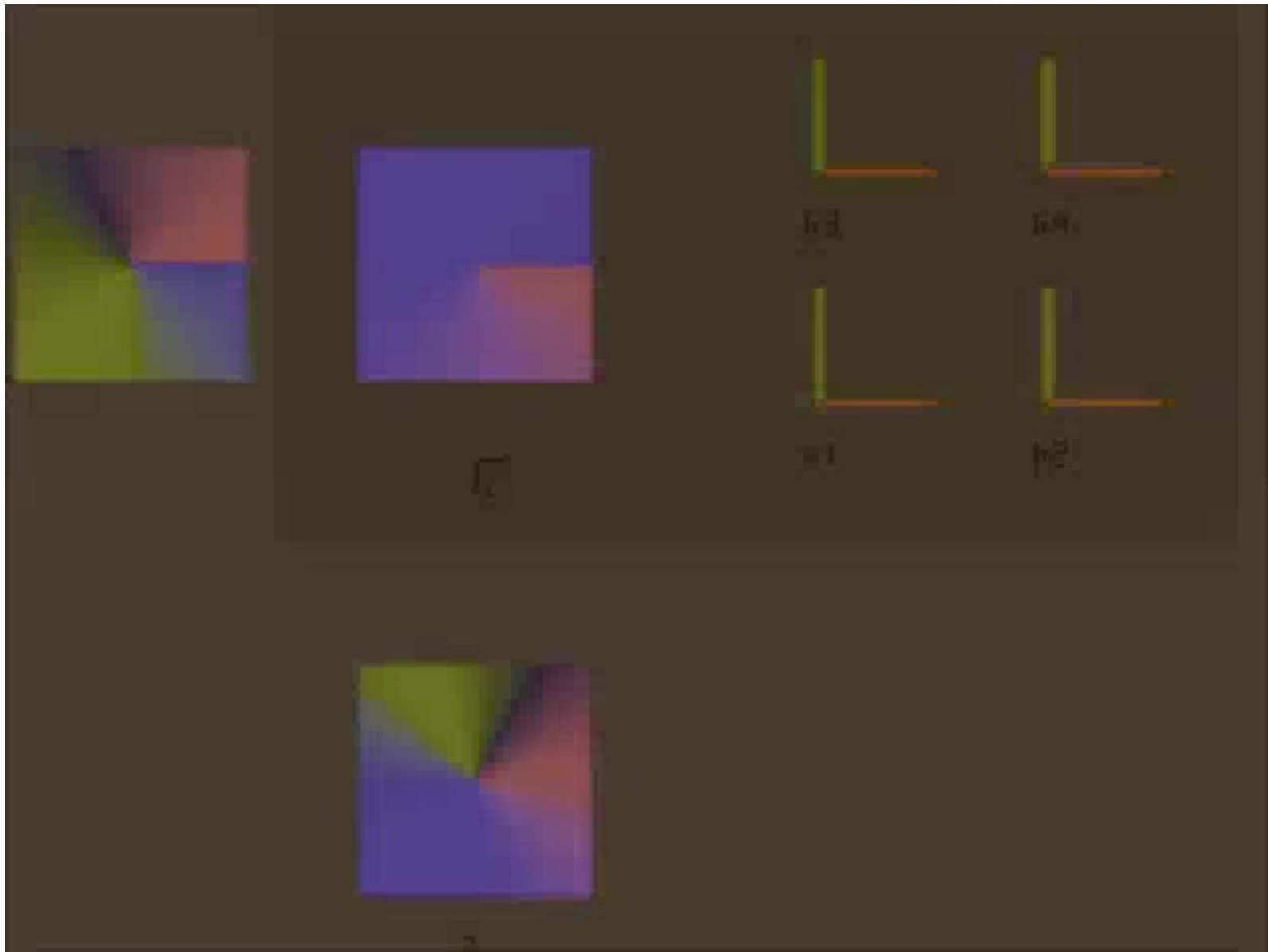


双叶黎曼面

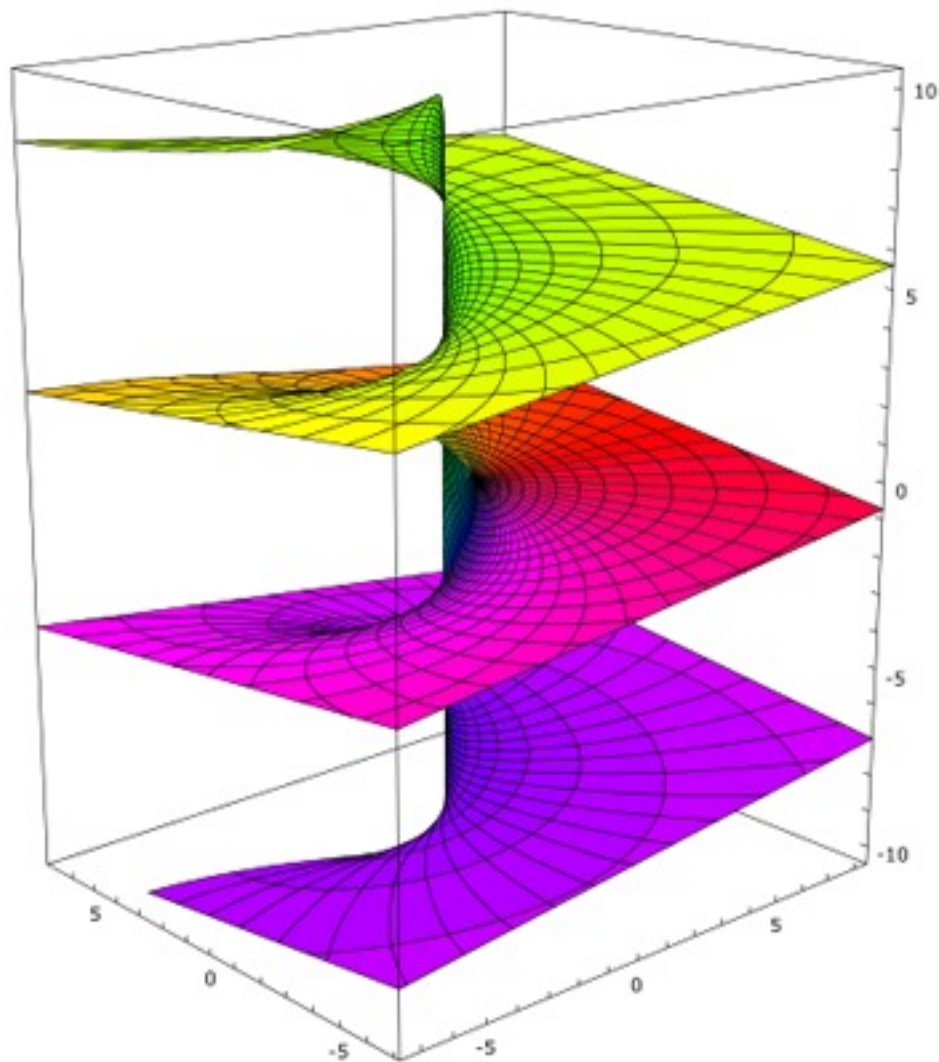


$$\sqrt{z}$$

复变函数开根号对应两个单值分枝，两枝都取割线，以满足连续性的要求. 粘在一起形成黎曼面，从而得到单值函数。



无穷叶黎曼面



复变函数取对数对应无穷多个单值分枝