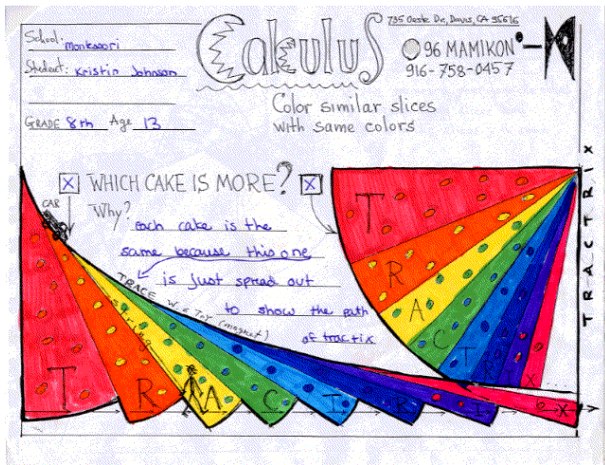


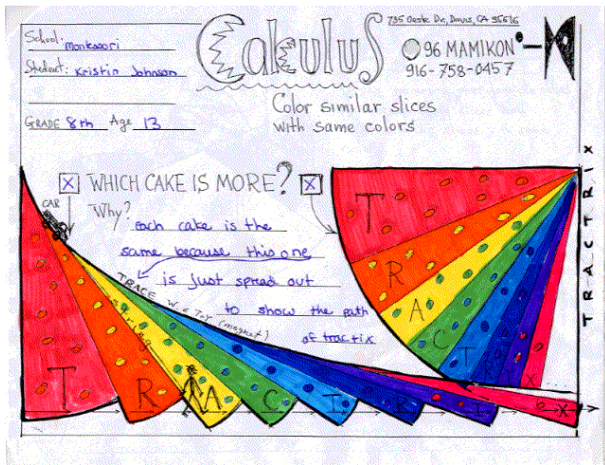
## 1.1 & 1.2: Tractrix and Arc Length

$$\alpha(\theta) = (\cos(\theta) + \ln(\tan(\frac{\theta}{2})), \sin(\theta))$$



## 1.1 & 1.2: Tractrix and Arc Length

$$\alpha(\theta) = (\cos(\theta) + \ln(\tan(\frac{\theta}{2})), \sin(\theta))$$



$$\alpha'(\theta) = (-\sin(\theta) + \frac{\sec^2(\frac{\theta}{2})}{2 \tan(\frac{\theta}{2})}, \cos(\theta))$$