



# EXPO DAYS 2012 – IL MONDO A TAVOLA

## IMPARARE MANGIANDO

▶ POLITECNICO DI MILANO



## ▶ La pasta e le sue forme: *rigate* e *rigatoni* (sintesi dalla presentazione)

Luisa Rossi Costa - Elena Marchetti





- **Spaghetti**

*Spaghetti*

*Spaghettoni*

*Capellini*

- **Maccheroni**

- **Rigatoni**



- **Ditalini**



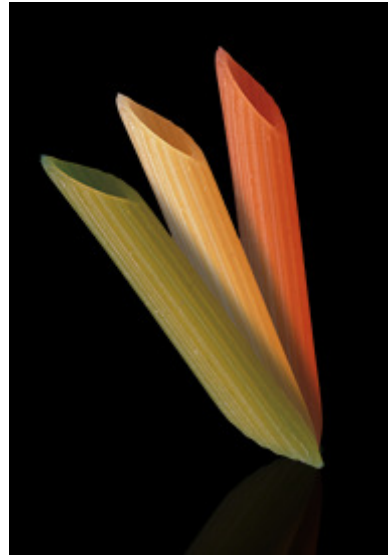
- **Paccheri**



....e ora matematizziamoli !!!

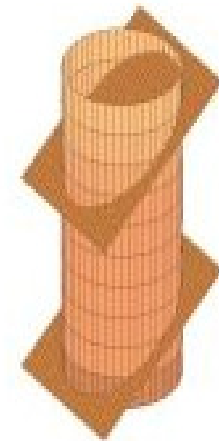
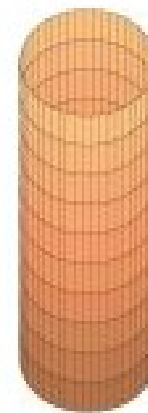


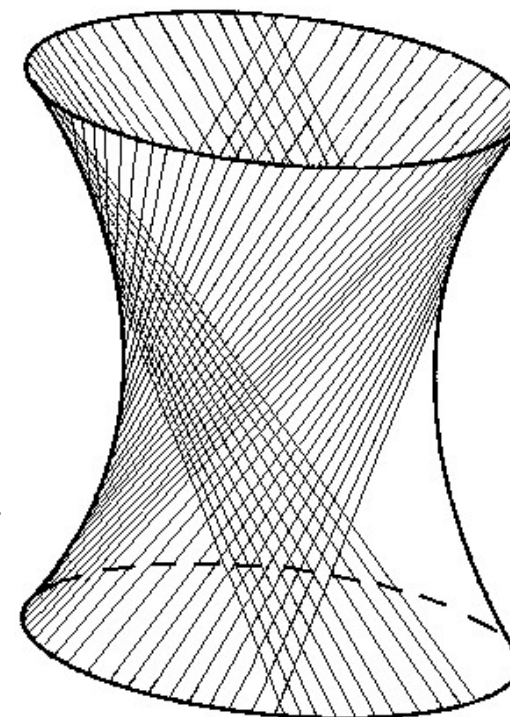
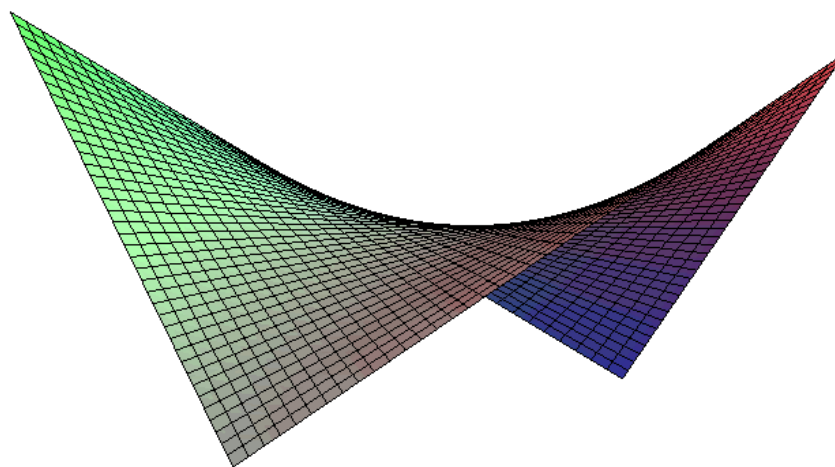
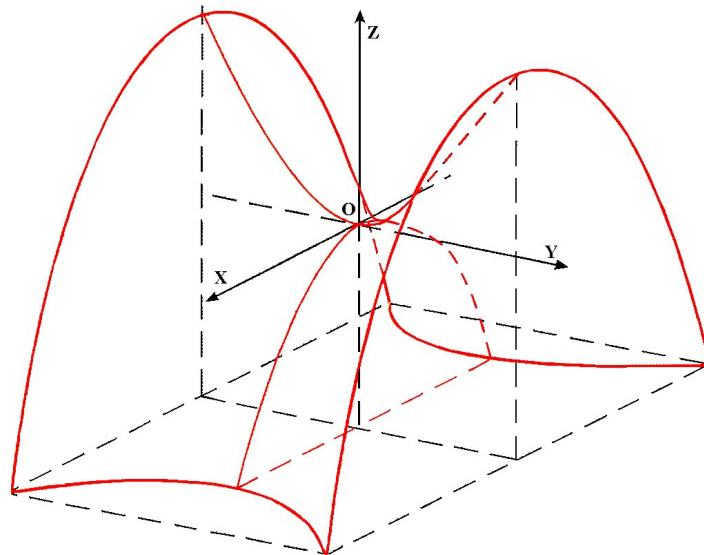
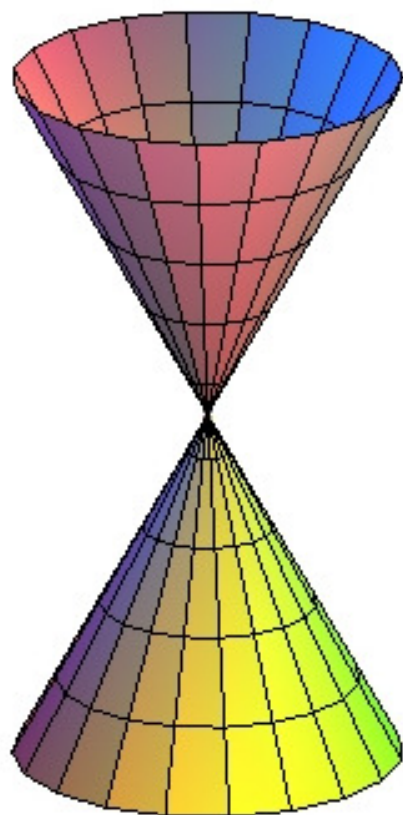
- penne
- pennette
- penne rigate



Protagonista ancora la **superficie cilindrica!**

- Tagliata ancora con *piani paralleli*, ma *obliqui* rispetto alle rette che passano per ogni suo punto.





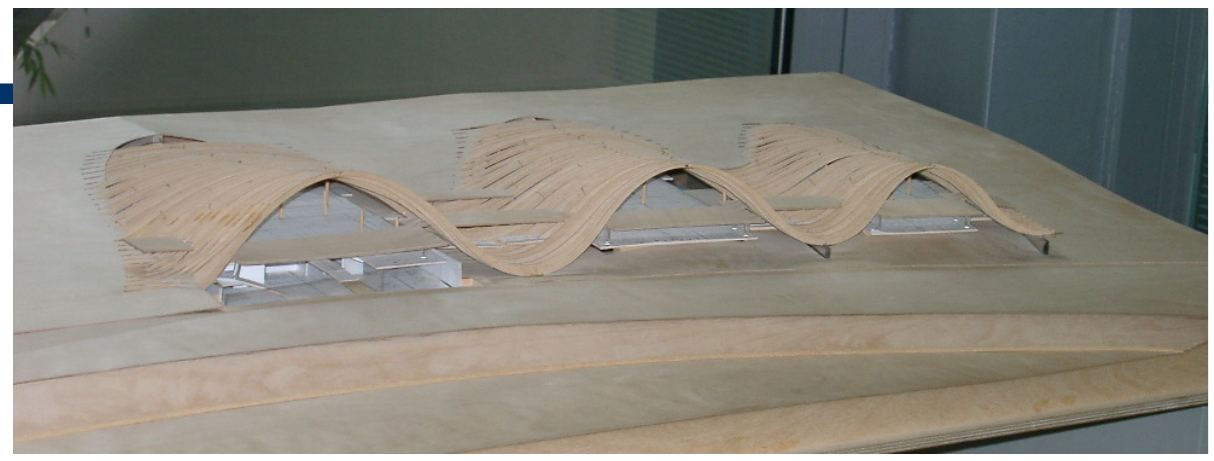


# Lasagne, lasagnette



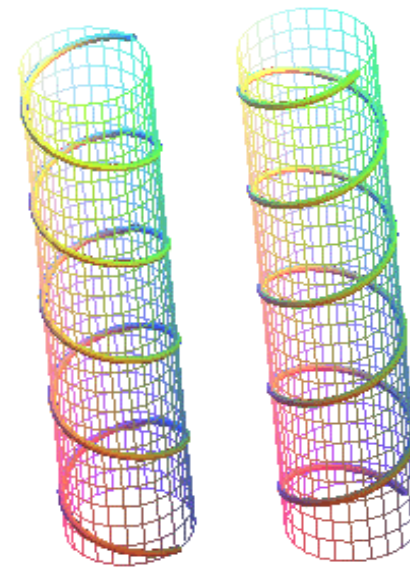
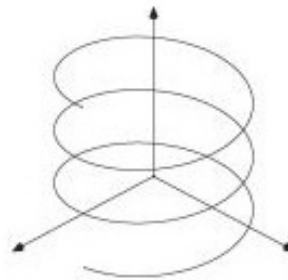
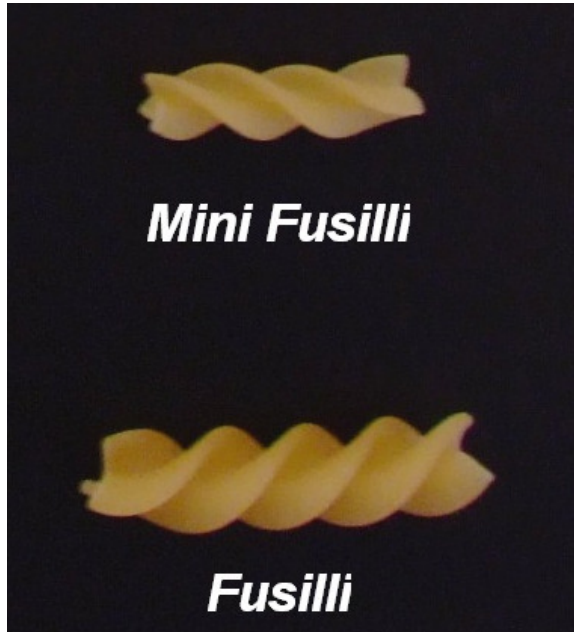


Zentrum Paul Klee  
Bern





# La famiglia dei fusilli





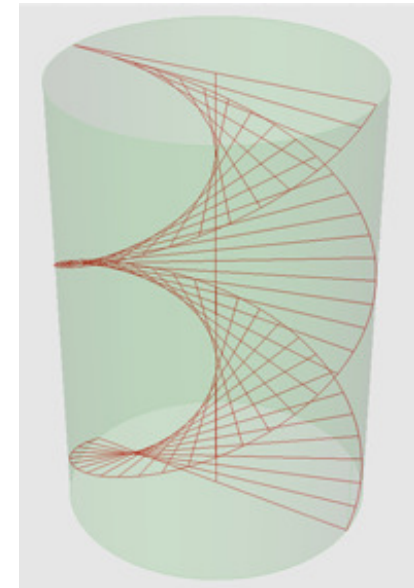
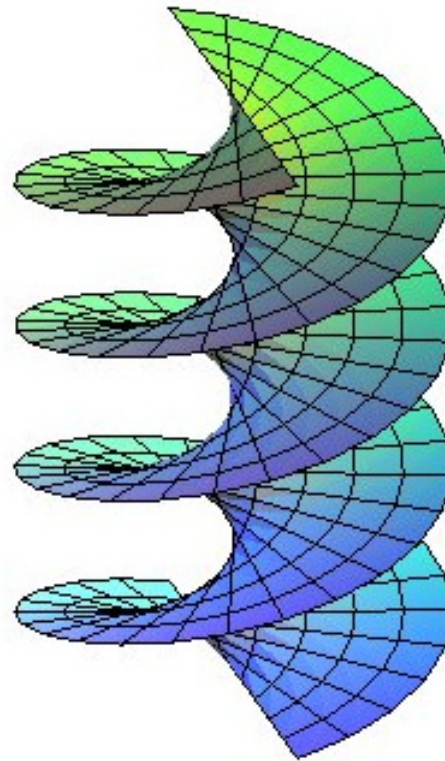
Linea regolare

$$\mathbf{v}(t) = [x(t), y(t), z(t)]^T, \quad t \in I \quad (I \subseteq \mathbb{R})$$

$$\mathbf{v}(t) \in C^1(I), \quad \mathbf{v}'(t) \neq \mathbf{0}$$

Elica cilindrica

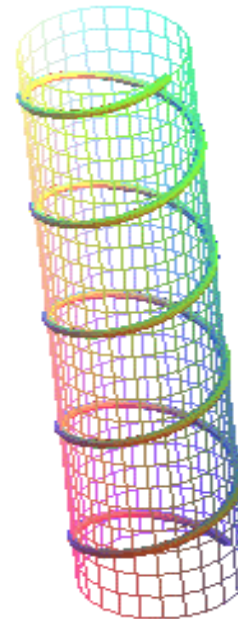
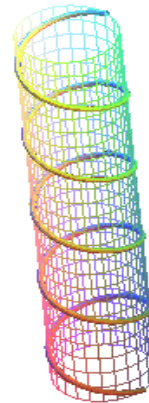
$$\mathbf{v}(t) = [r \cos t, r \sin t, kt]^T$$





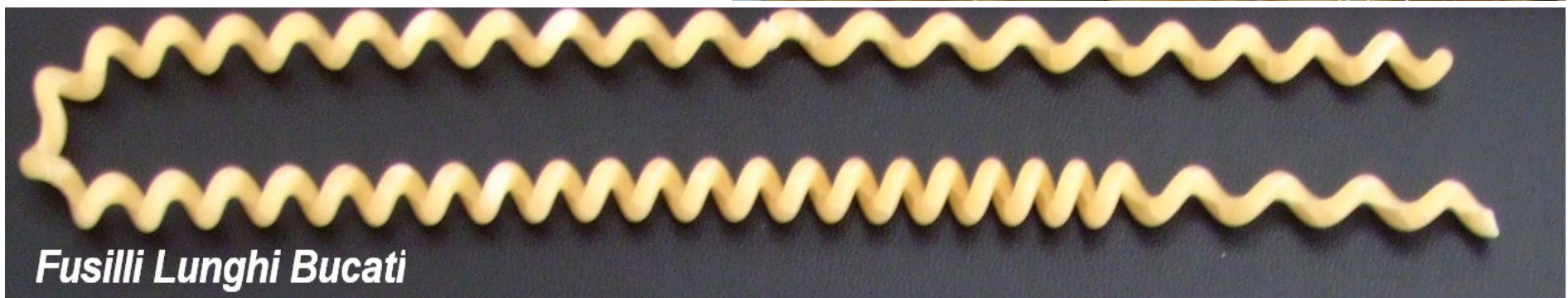
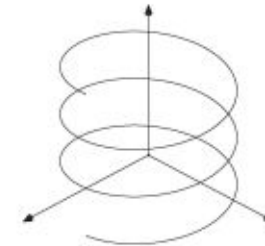


Protagonista è  
l'**elica cilindrica**,  
talvolta una **doppia elica**.





La circonferenza trasla  
lungo l'elica cilindrica



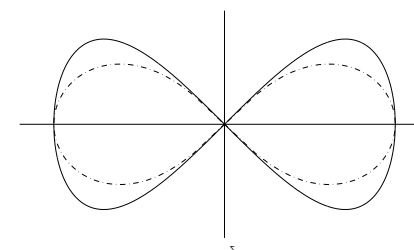
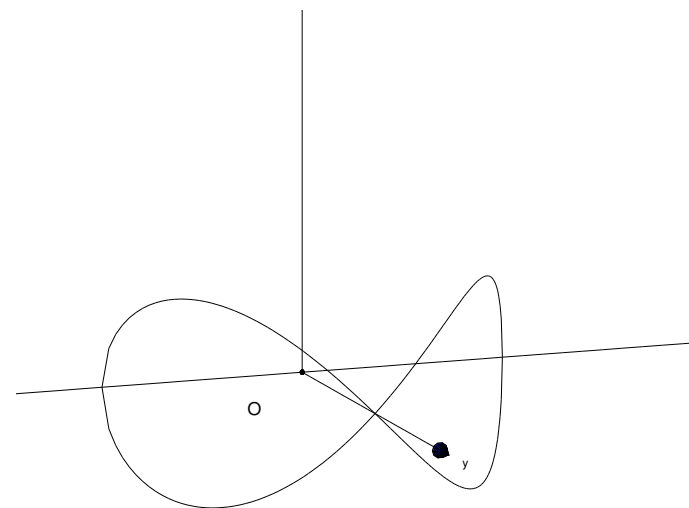
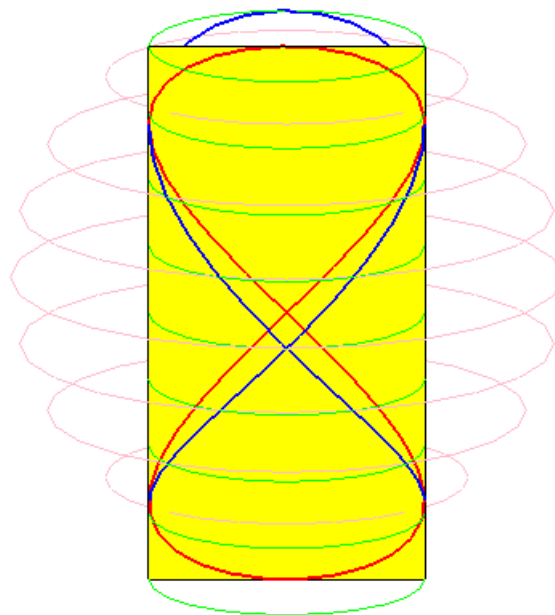
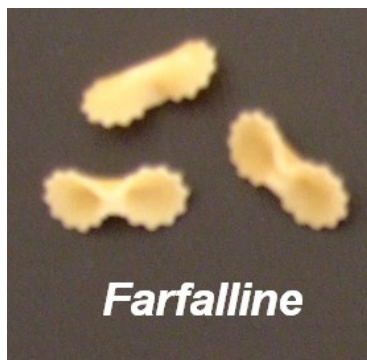


- farfalline
- farfalle



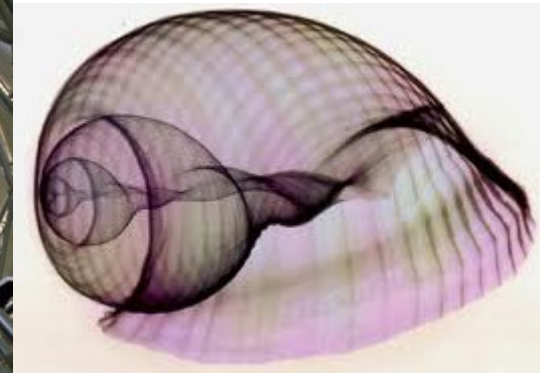
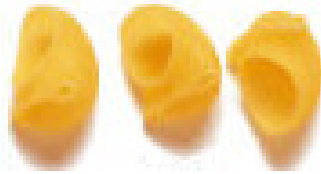


# Come legare le farfalline alla curva di Viviani



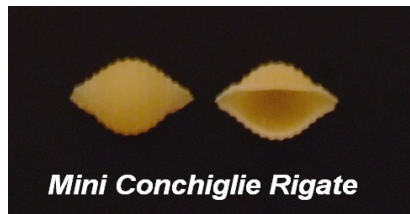
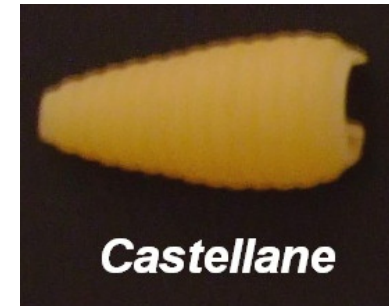


# Conchiglie e pipe



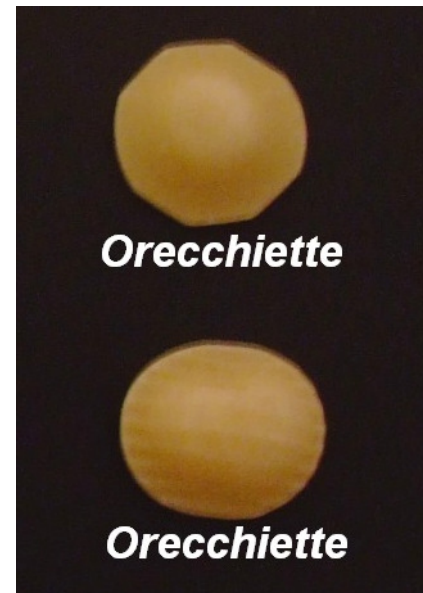
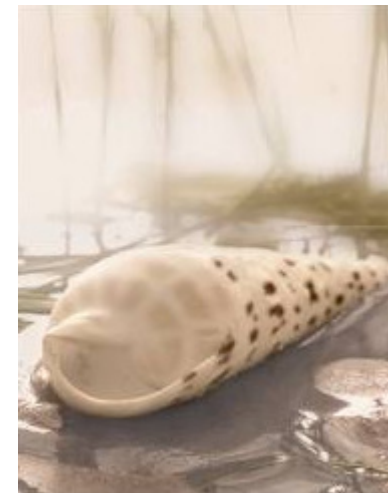
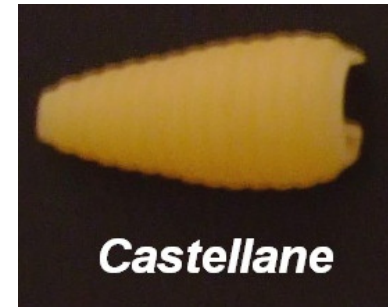


# Conchiglie e gnocchetti



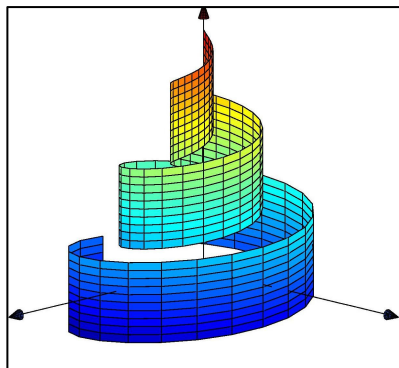


# Ancora conchiglie





# Spirali coniche





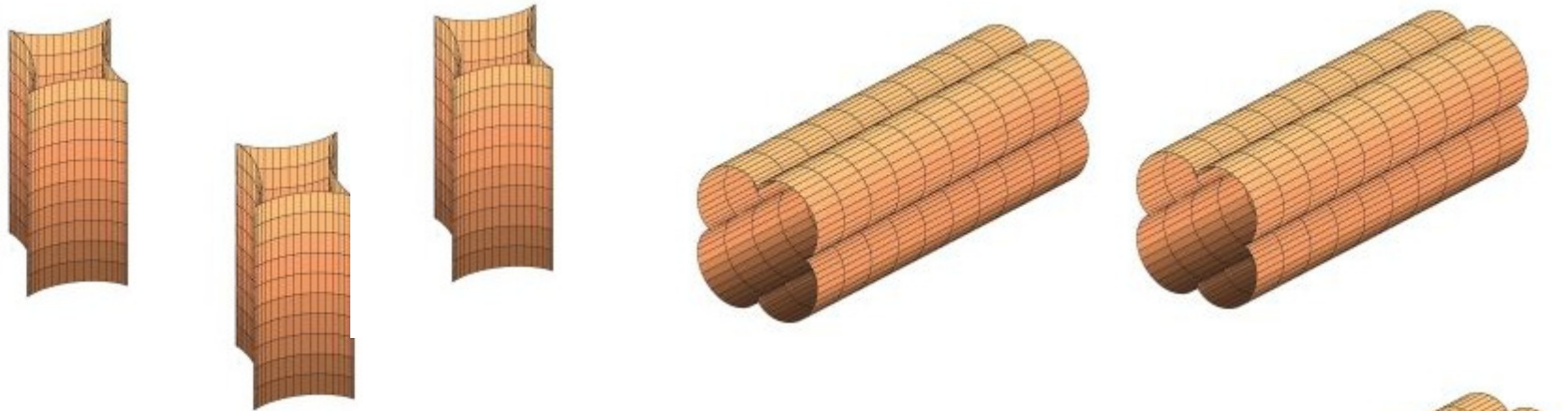




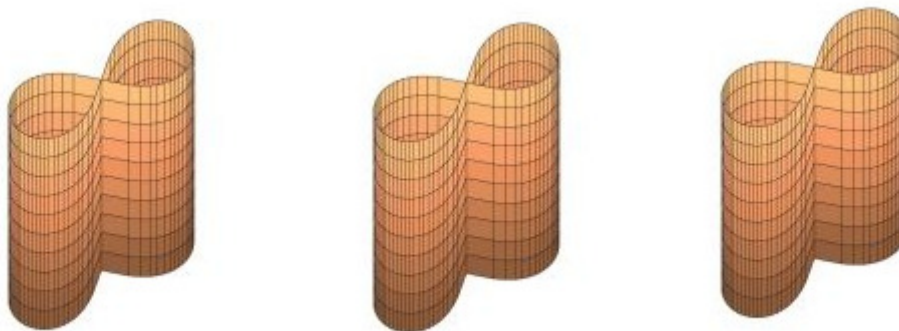
## Möbius pasta

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Ipocicloidi e epicicloidi



Lemniscate



... alla fine del pasto!

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Laboratorio di Formazione Matematica e di Sperimentazione Didattica

**e f f e d i e s s e = f ( s )**