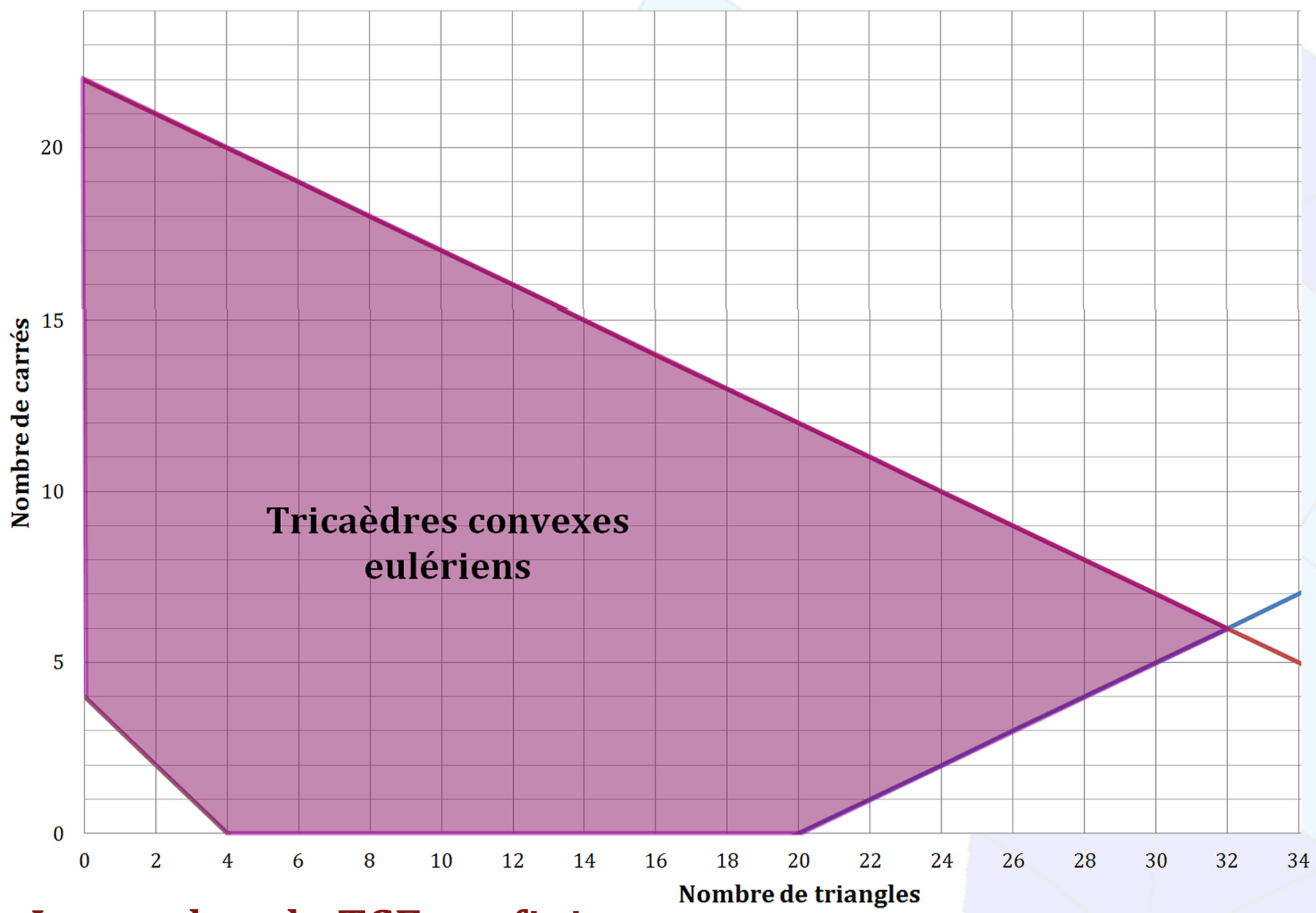
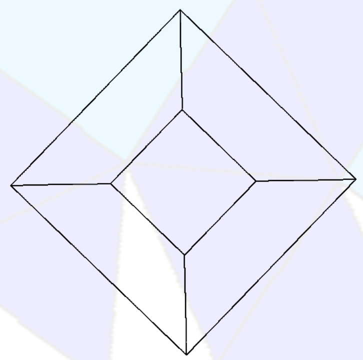
ZONE DÉLIMITANT LES TRICAÈDRES CONVEXES EULÉRIENS



Le nombre de TCE est fini.

$$s \times \frac{\pi}{2} = 4\pi$$
$$s = 8$$
$$s - a + r = 2$$
$$8 - 2c + c = 2$$
$$c = 6$$

Le cube est l'unique tricaèdre convexe eulérien composé uniquement de carrés.



DÉTERMINATION DES TCE

$$\sum_{x \epsilon S} \delta(x) = 4\pi$$
$$\sum_{x \epsilon S} \frac{k_x \pi}{6} = 4\pi$$
$$\sum_{x \epsilon S} k_x = 24 \; avec \; k_x \epsilon \{1;2;3;4;5;6\}$$
$$\sum_{i=1}^{6} x_i = s$$
et
$$\sum_{i=1}^{6} i x_i = 24$$

Il existe p ∈ ℕ,

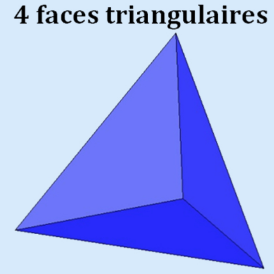
$$\begin{cases} x'_1 + x''_1 + x'_2 + x''_2 + x'_3 + x'_3 + x'_4 + x''_4 + x_5 + x_6 = s = 2 + c + \frac{t}{2} \\ x'_1 + x''_1 + 2(x'_2 + x''_2) + 3(x'_3 + x'_3) + 4(x'_4 + x''_4) + 5x_5 + 6x_6 = 24 \\ x'_1 + 3x''_1 + 2x''_2 + x'_3 + 3x''_3 + 2x''_4 + x_5 = 4c \\ 4x'_1 + 1x''_1 + 5x'_2 + 2x''_2 + 3x'_3 + 4x'_4 + x''_4 + 2x_5 + 3x_6 = 3t \\ x'_1 + x'_2 + x''_3 + x''_4 + x_5 + x_6 = 2p \end{cases}$$

$$\begin{pmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & -s \\ 1 & 1 & 2 & 2 & 3 & 3 & 4 & 4 & 5 & 6 & -24 \\ 1 & 3 & 0 & 2 & 1 & 3 & 0 & 2 & 1 & 0 & -4c \\ 4 & 1 & 5 & 2 & 3 & 0 & 4 & 1 & 2 & 3 & -3t \end{pmatrix}$$

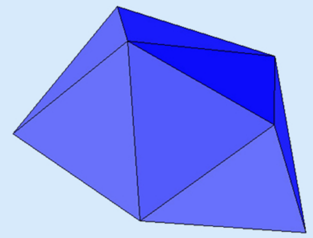
$$\begin{pmatrix} 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & 1 & -s \\ 0 & 1 & 0 & 1 & 1 & 2 & 1 & 2 & 2 & 2 & 4c + 3t - 5s \\ 0 & 0 & 1 & 1 & 2 & 2 & 3 & 3 & 4 & 5 & -24 + s \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & -24 + 12s - 12c - 6t \end{pmatrix}$$

DELTAÈDRES

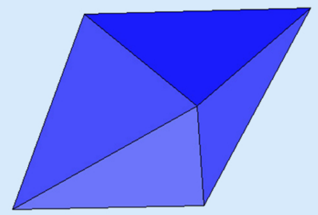
Tétraèdre
4 faces triangulaires



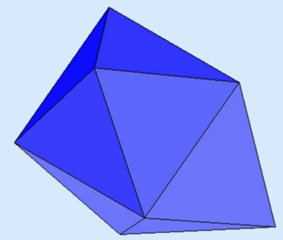
Snub disphénoïde
12 faces triangulaires



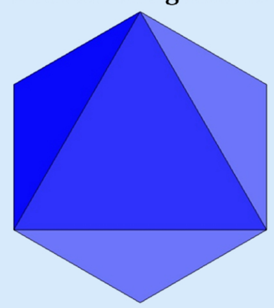
Diamant triangulaire
6 faces triangulaires



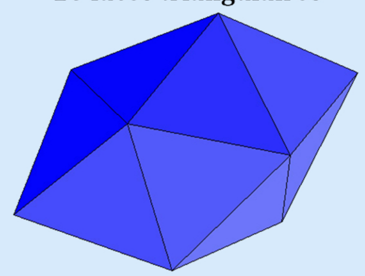
Prisme triangulaire triaugmenté
14 faces triangulaires



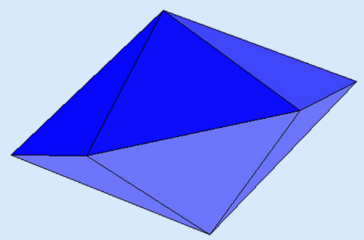
Octaèdre
8 faces triangulaires



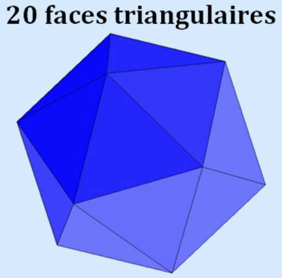
Pyramide carrée gyroallongée
16 faces triangulaires



Diamant pentagonal
10 faces triangulaires



Icosaèdre
20 faces triangulaires



Et celui à 18 faces ?