Tesselating Cannoniacal K-Covers of Convex Polyhedra

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1 Prisms and Anti-Prisms

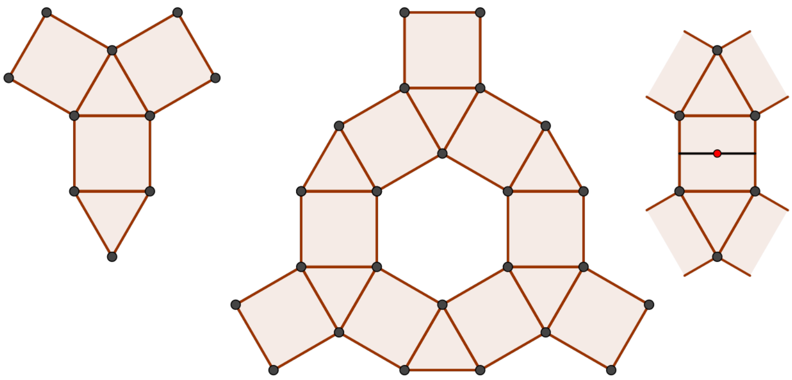
Proposition: Every Prism lies on $\mathcal{H}_n(-1^{2n})$ and is covered by $\mathcal{H}((n-2)^{2n})$. The cover always has genus $(n-2)^2$.

- $n-$gons have internal angle $\frac{(n-2)\pi}{n}$
- Elongations consist of two squares or three triangles with total angle π
- The angle around every vertex on a prism or anti-prism is therefore $\frac{(n-2)\pi}{n} + \frac{n\pi}{n} = \frac{(2n-2)\pi}{n}$ and there are of them
- $2n-2 = 2(n-1)$ is always even so for all $n, k = n$ and deficiency from $\frac{2n\pi}{n}$ is always $\frac{2}{n}$ so the order of every zero is -1
- Since $k = n$ multiplicities on the cover are unchanged
- The orders of these zeroes are $\frac{(2n-2)-2)}{2} = \frac{2n-4}{2} =$
- It follows that the genus of the cover is equal to :
- $2g - 2 = 2n((n-2)$
- $2g = 2n^2 - 4n + 2$
- $g = n^2 - 24n + 1 = (n-2)^2$

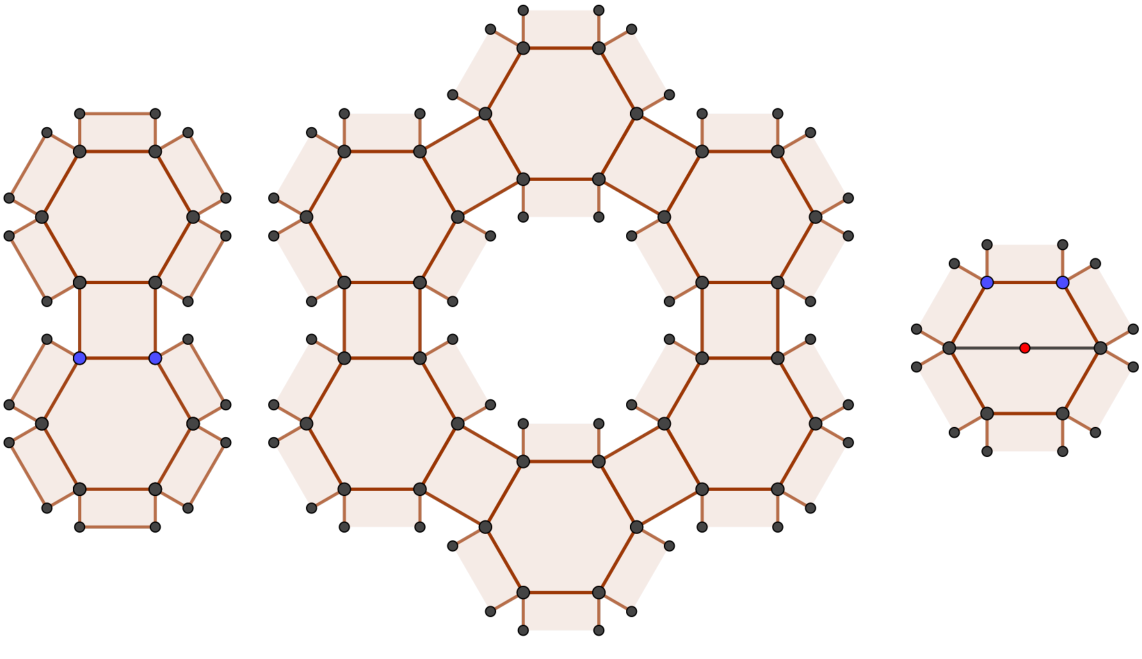
Proposition: The tesselating subsurface of every cannonical k-cover for regular prisms and anitprisims is either the net of the prism (for odd n) or half the net of the prism (for even n). In both cases involution by is possible. This is true because $k = n \rightarrow finestangleofrotation = \frac{2\pi}{n}$ which leaves the base $n-$gon invariant.

We show this explicity for n=2,3,4,6,12,15,24,30 and 60

1.0.1 3



1.0.2 6



2 Prisim-Like Polyhedra