Goal: Understand the classification of polygonal isosceles types of proper things, in the case of triangles.

GöS declare $g_1$ and $g_2$ to have the "same type" if they are homothetic; we write $g_1 \sim g_2$ or $g_1 \sim H g_2$ where $H$ is a homothety.

EXP (LAST TIME)

For $\alpha > 0$

\[(x, n + \alpha \sin(\pi n))\]

Important: Homothety preserves symmetry group.

EXP: $P_3 - 10 \not\sim P_3 - 9$ from GöS.

$P_4 - 5\mathbb{R}$

$\mathbb{R} \sim [0, 1]$

Non $\pi_2 \in \mathbb{R}(\mathbb{G})$ but $\pi_2 \not\in \mathbb{R}(\mathbb{G})$

So $\mathbb{G}$ and $\mathbb{G}^2$ are not homothetic.
Now \( J \) and \( J^2 \) can be subdivided:

\[
\begin{array}{c}
\begin{array}{c}
\text{\( J \)} \\
\begin{array}{c}
\frac{\pi}{2} \in S(J) \\
\text{\( J^2 \)}
\end{array}
\end{array}
\end{array}
\]

\[
\begin{array}{c}
\begin{array}{c}
\text{\( \overline{J} \)} \\
\begin{array}{c}
\text{\( \overline{J^2} \)}
\end{array}
\end{array}
\end{array}
\]

so \( J \) and \( J^2 \) must be different types.

\( J^2 \) is of type \( P_3 - 9 \);

\( \overline{J} \) is of type \( P_3 - 10 \) because

(rotate and scale to get \( \overline{J} \)).

You can check that \( P_3 - 1 \) and \( P_3 - 8 \) are extremely rigid, but homotopy is too flexible to deal with

\[
\{ P_3 - 2, P_3 - 3, P_3 - 4, P_2 - 5, P_3 - 6, P_3 - 7 \}
\]

G65S introduce "polyhedral isogonal type".

Important: in a proper thing (by polygons)

\[
T_1 \cap T_2 \subset T_k \text{ for } k \text{ a side of } T_k (b:1,2)
\]

where \( T_1, T_2 \in T \).
This means that we can't have a corner that breaks up this intersection into two sides.

Def: Homothetic $T_1$ and $T_2$ have the same "polyhedral type" if, for every vertex $v$ of $T_1$, we can choose $\psi$ (the homothety) such that $\psi(T_1)$ is a corner of $\psi(T_2)$.

Consequence: $\psi$ cannot change the number of sides in any tile.

However, we saw that

But there is some flexibility in how these "strips" are assembled.

Examples: $P_3-6$ "flip-flops" vertically by reflection.

$P_3-5$ constructs a zig-zag strip.