Fox-face unit

https://github.com/heptagons/meccano/fox-face

Abstract

Fox-face is a group of five meccano strips not forming implicit triangles but a fox-faced figure used to build a regular pentagon. Here, we'll look for other angles but not only pentagon's $\cos 2\pi/5$.

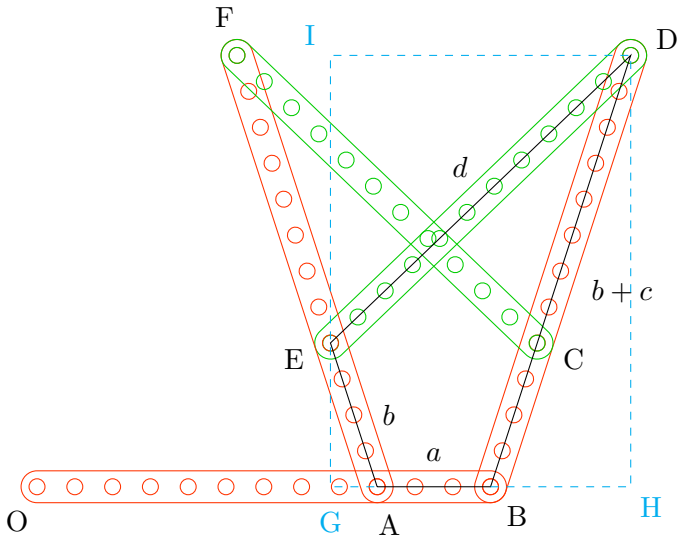

Figure 1: Fox-figure

Figure 1 show the so called fox-face unit. Has five strips of three types:

- Single $\overline{AB}$ of length a.
- Pair { $\overline{BD}$, $\overline{AF}$ } of length $b + c$.
- Pair { $\overline{DE}$, $\overline{CF}$ } of length d.

In other words we have four different distances:

- a distance of segment $\overline{AB}$.
- b distance of segments $\overline{BC}$ and $\overline{AE}$.
- c distance of segments $\overline{CD}$ and $\overline{EF}$.
- d distance of segments $\overline{DE}$ and $\overline{EF}$.

We are going to test several values of (a, b, c, d) and calculate the angle $\angle HBD$. First we'll calculate a formula and then we'll run a program iterating integer values.