

Throughout we assume we are working in a graph theory context.

Definition 1. A *coinjoin* is a vertex set consisting of r input vertices i_1, \dots, i_r , each labelled with their corresponding values, along with s outputs o_1, \dots, o_s , each labelled with *negative* their corresponding values. We further required that

1. The sum of all vertices is ≥ 0 (at least as much input value as output value).

Definition 2. A *plausible join* is a graph $G = (V, E)$ whose vertex set is a coinjoin, and whose edgeset satisfies:

1. Each edge connects some input vertex with some output vertex.
2. Every output vertex has degree ≥ 1 (there are no “floating outputs”).
3. Each component of the graph has vertex sum ≥ 0 .

The problem is: given a coinjoin C , find the plausible join with the highest number of components.