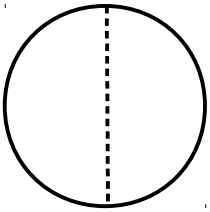
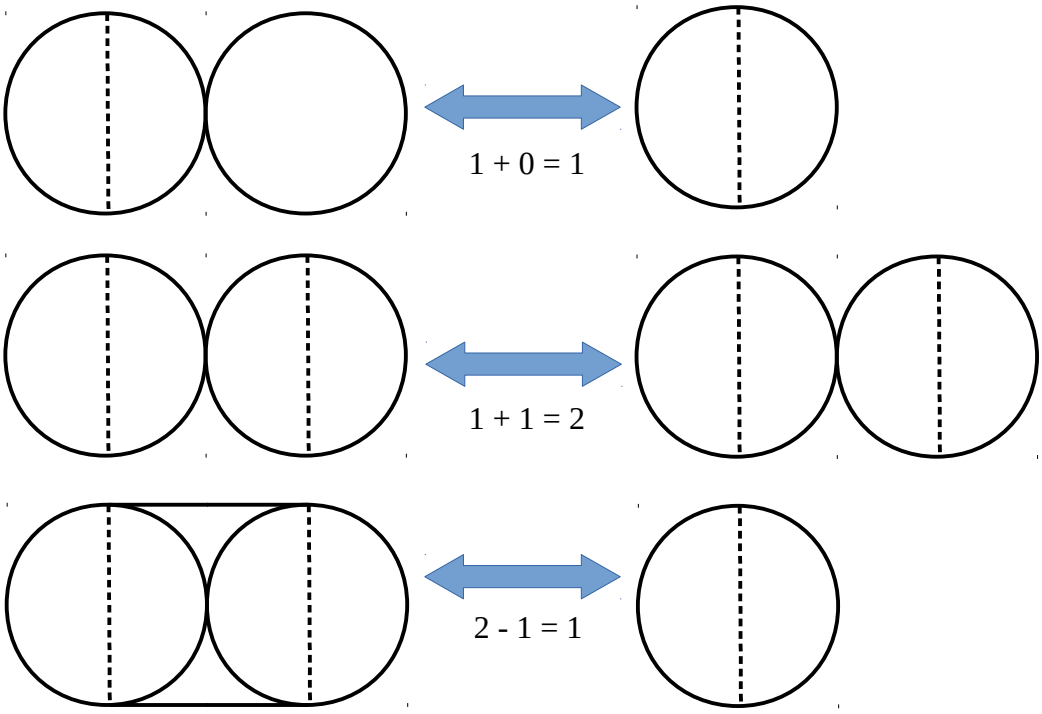
Natural Numbers Constructed by Contracted Havox Diagrams

by Sven Nilsen, 2018

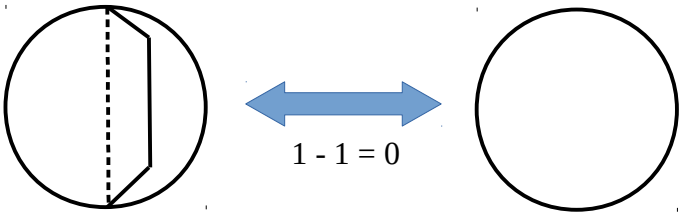
When a Havox diagram proves a contradiction by contraction, it might end up with the following:



This diagram has some properties of `1` when connected to itself or a non-contradiction `0`:

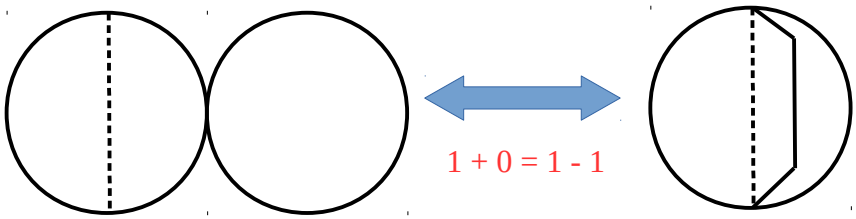


One might argue that since there is beautiful connection, the following should be allowed:



However, there is a catch. If this rule is used, then it implies another rule as well.

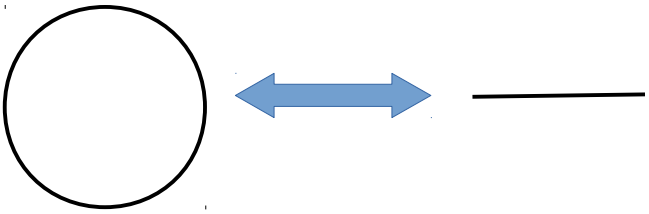
Assume the following:



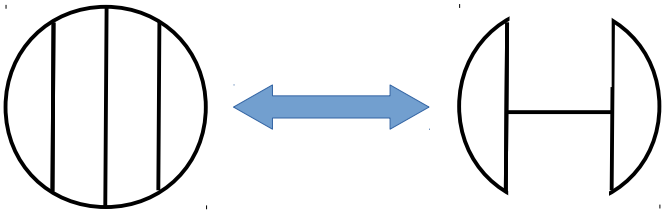
To perform this unsound operation in natural numbers, one must tear the end point of `0` where it is connected with `1` in two, in order to connect them to each end point of the dotted line.

With other words, assuming that “1 - 1 = 0` is allowed, it is not allowed to tear apart an end point.

However, the following is allowed:



A circle can be contracted to a line, because this is not tearing, but pairing up points on the circle:



This process can be repeated until one gets a line, as long each step is contractible.

For example: