introduction

this booklet contains several non-electronic, single-purpose, handmade, artisanal, coloring, digital computers.

they compute when you collaborate with them by following the rules of play.

the booklet contains three series of computers computers that compare, computers that count, and computers that play.

before each series there's a description of what they do and what you can do with them.

the idea is to expose the inner workings of these digital computers and to help reveal how they can perform complex operations with a combination of simple components.

i hope you enjoy this digital time!

-pepepépepe

rules of play

choose two colors!

a □ color and a ○ color

color the above each computer

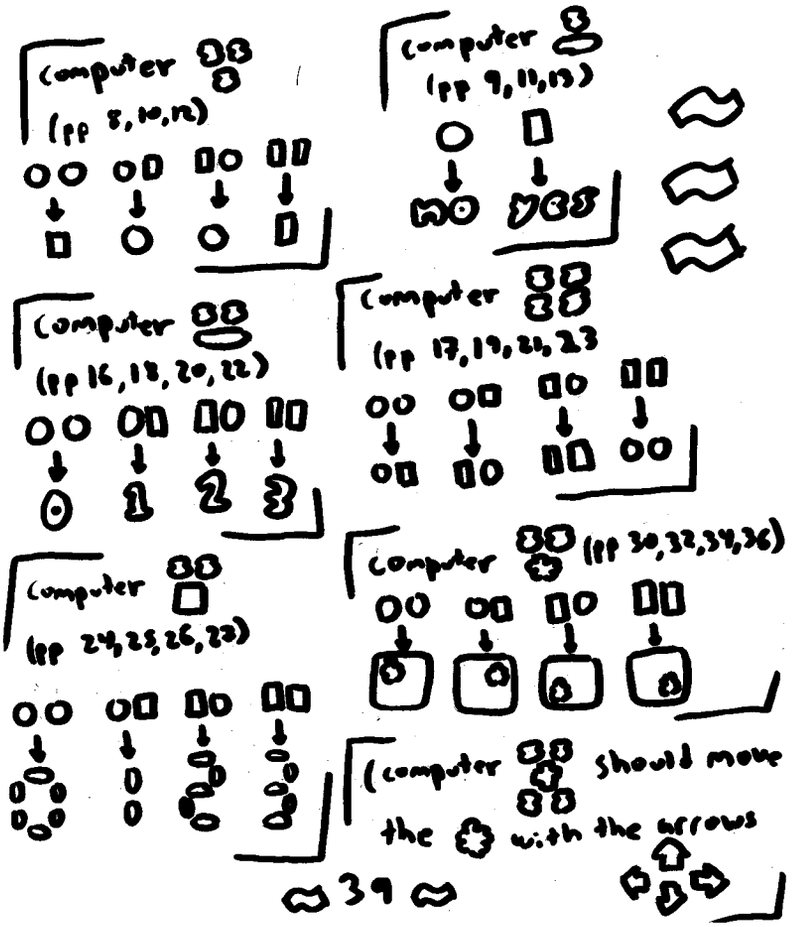
(use either one of the two colors)

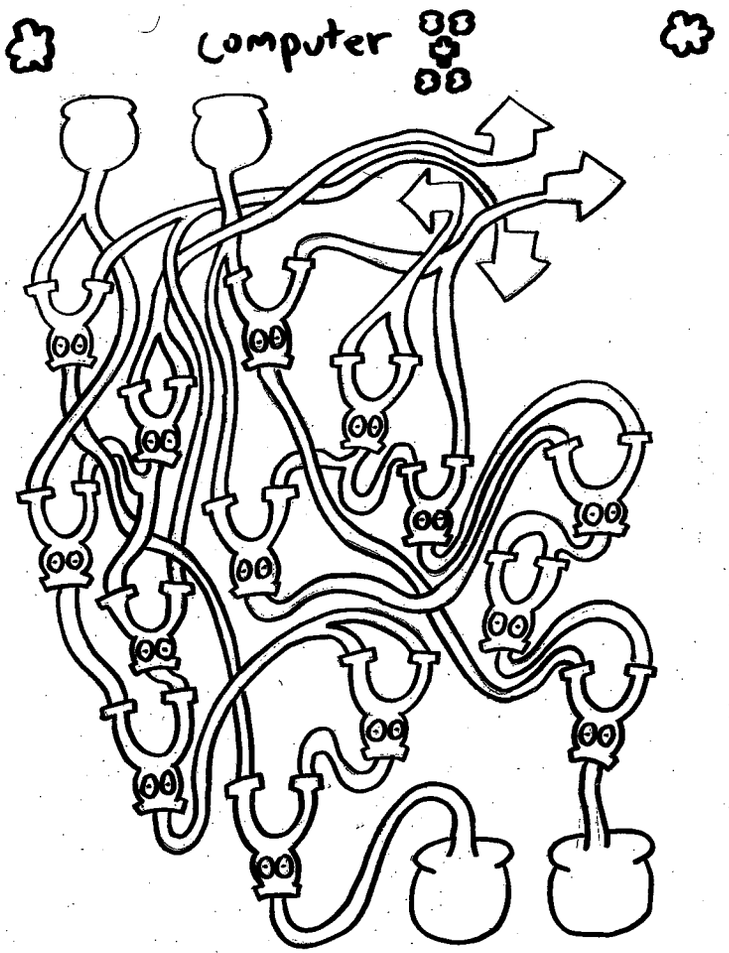
□ ○

follow the paths

until you reach other shapes, or a navy

key of results





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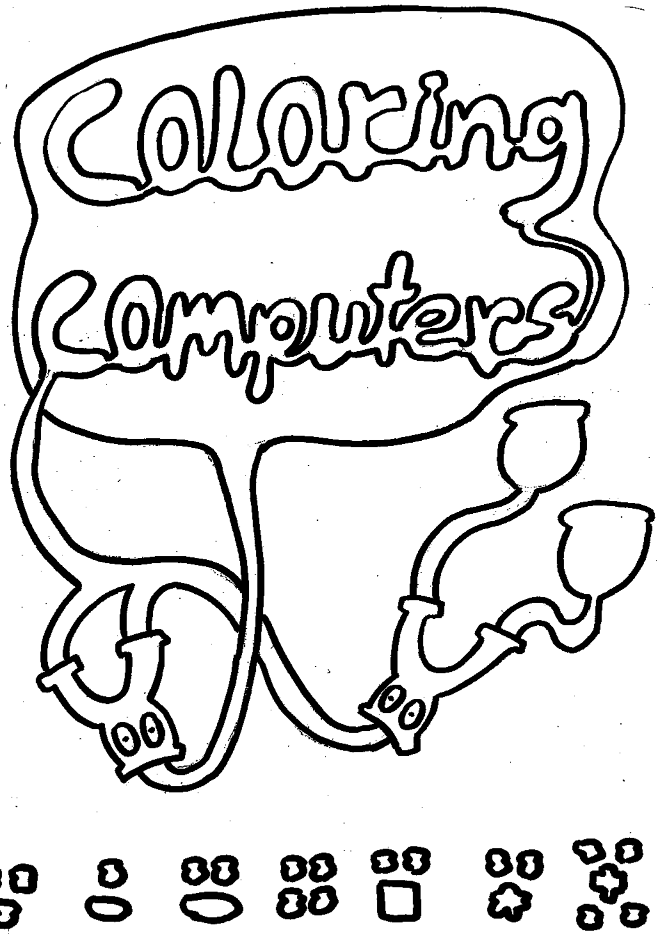
https://pepepepepe.eccs.world/coloring computers

contact: pepepepepe@eccs.world



afterword

hopefully you enjoyed collaborating with these coloring computers! from a technical standpoint, and in case you want to know more of how they work, they are all nor-based logic circuits, similar to several logic systems that exist within electronic computers. they were designed by using truth tables, karnaugh maps, and maxterms expansion. the numeric representation is binary. from a social, political and environmental perspective these computers are an exploration of computation without electricity and semiconductors, an attempt to reinvent digital systems away from efficiency and productivity, and a hopeful prototype to expose the inner workings of computers.

table of contents

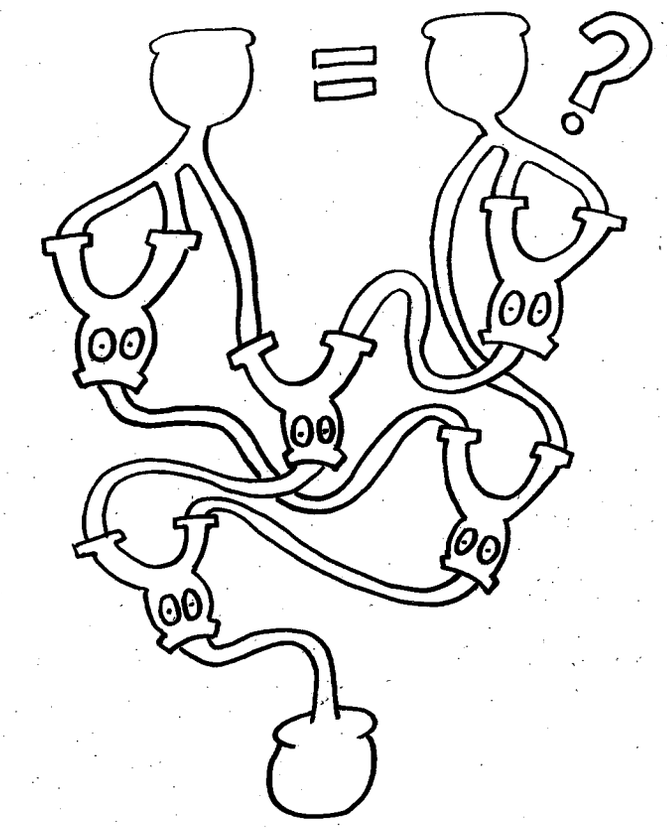
Computers that compare

in the next few pages there are two types of computer:

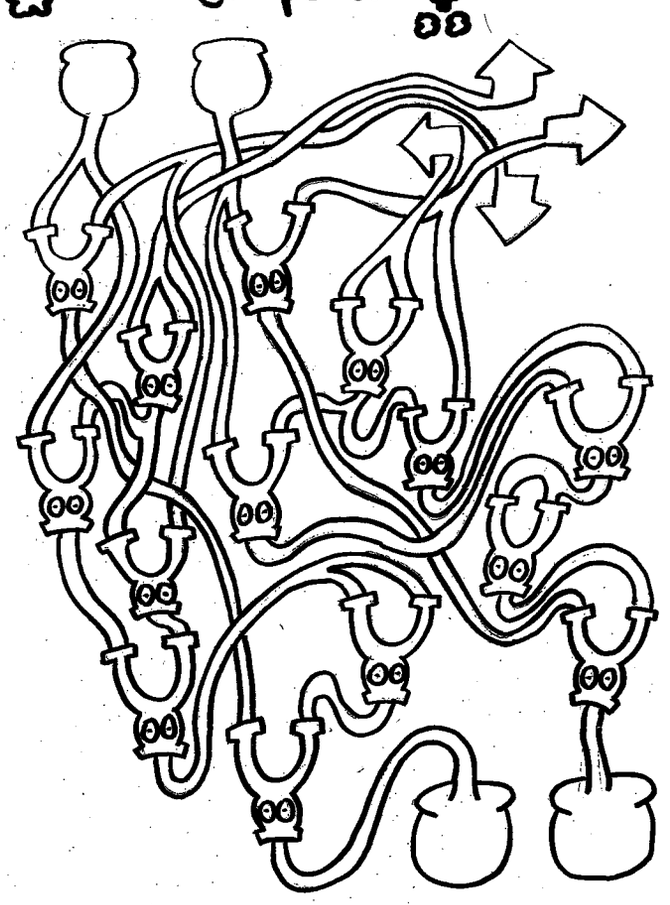
Computer is designed to answer if the colors in its are the same or not it answers with one color in

computer decodes the answer from computer translating it from a color to a highlighted YES or NO

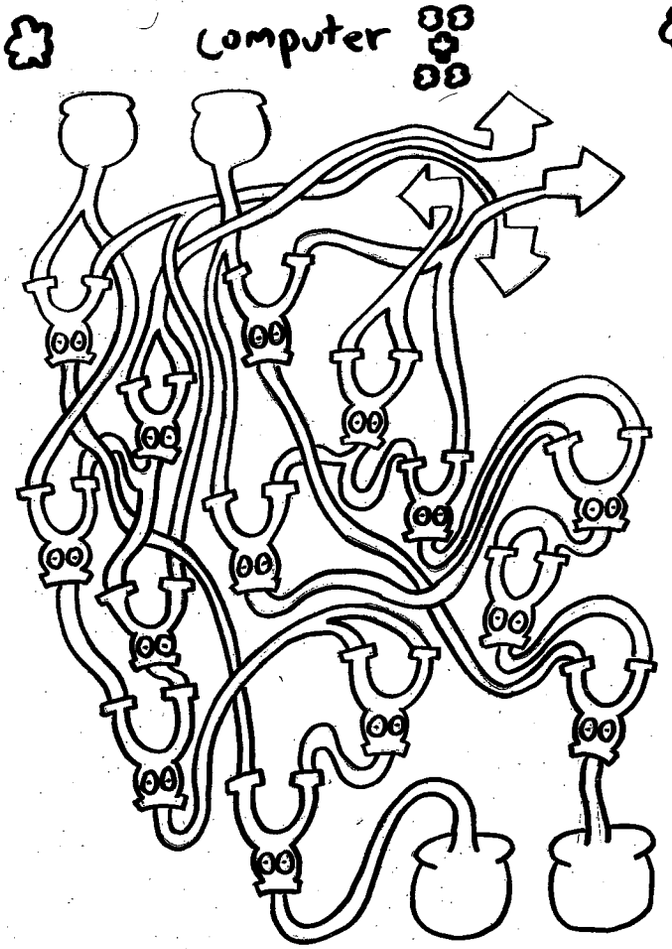
computer



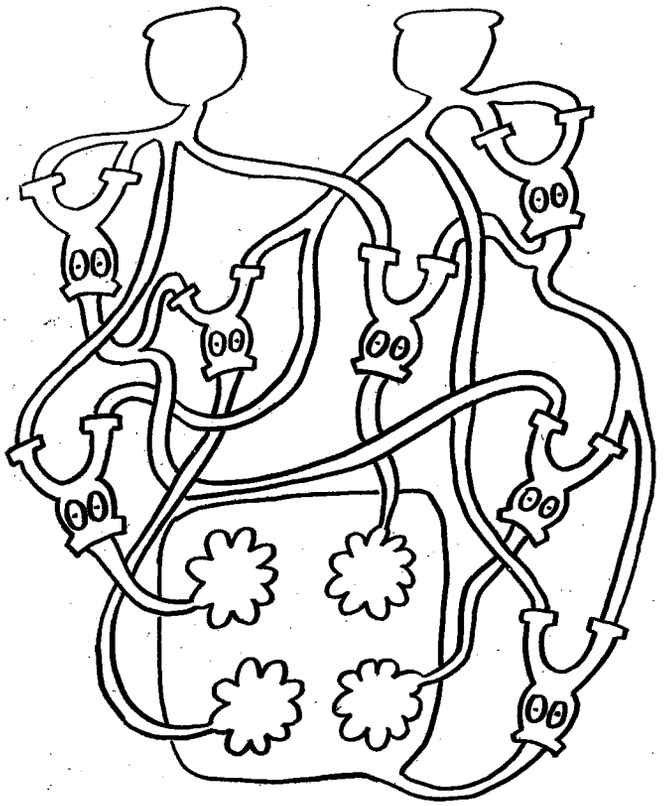
computer



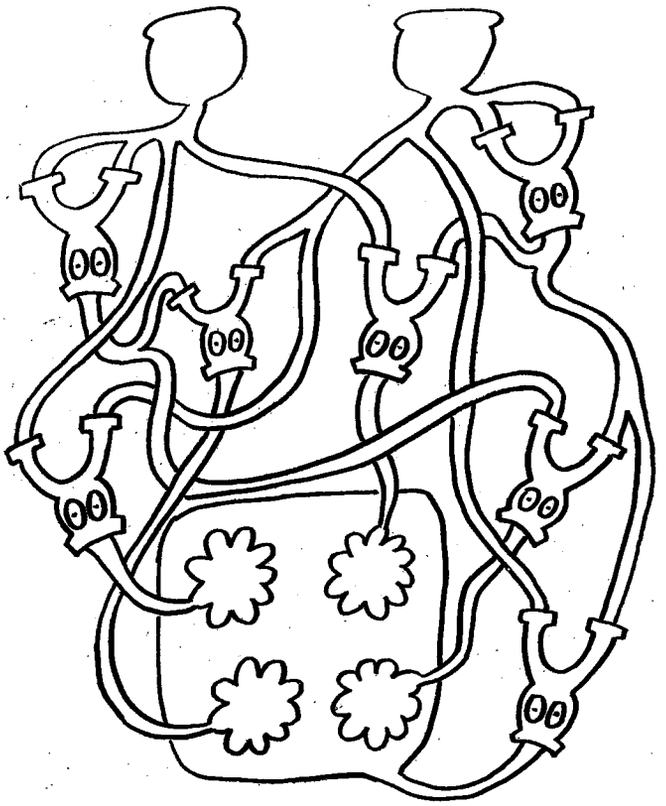
computer



computer



computer



follow the nory rule!

the color coming out will be □ only when both colors coming in are ○

in any other case the color coming out will be ○

what you can do

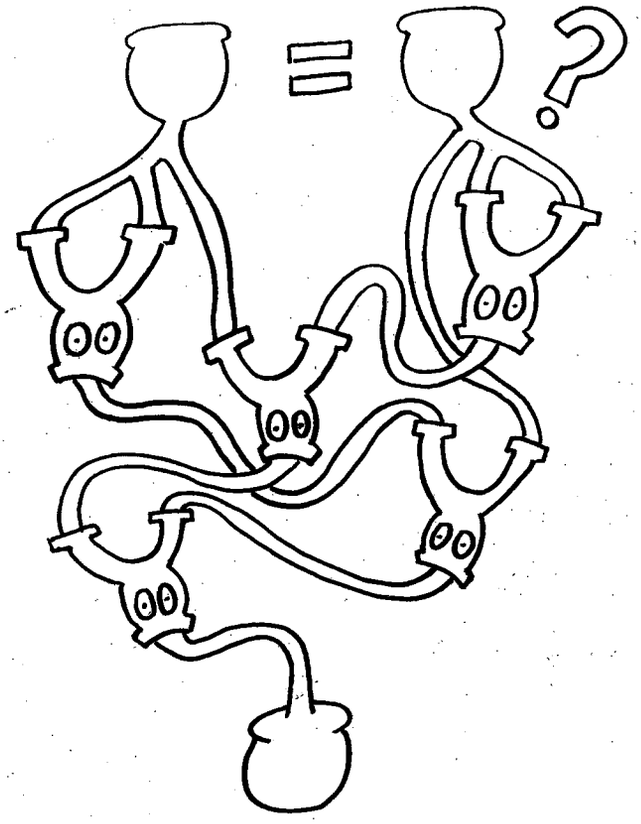
test if the computers do what i say they do!
(answer if the colors in ○○ are the same)

for each pair of ○○ & ○ computers

- try a different combination of colors in the ○○ of computer ○○
- copy the result ○ to computer ○

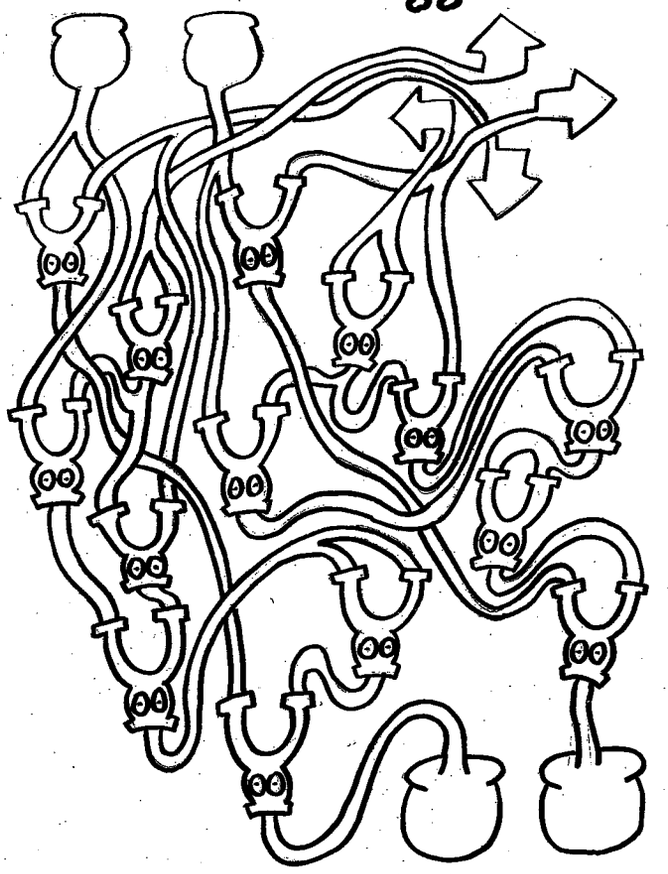
and see if the answer makes sense!

Computer



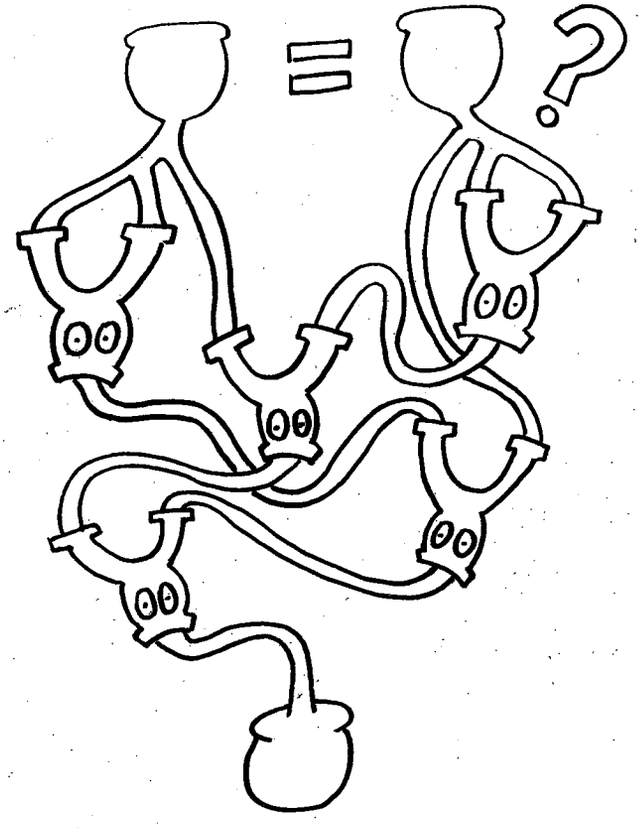
10

Computer



31

Computer



12

what you can do

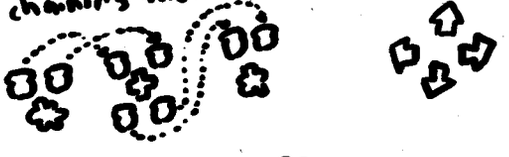
Start with any combination of colors in the of computer to get the initial position of the

Copy the two colors (same order) From computer to

and activate at least one arrow to get a possibly new combination of colors

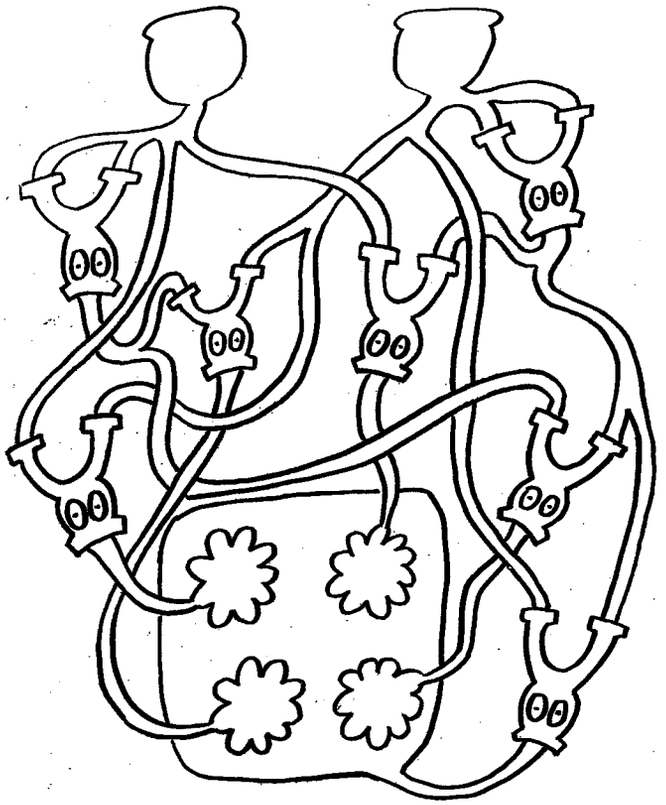
Copy these colors to a new computer to see the updated position of the

keep chaining them and moving the around!



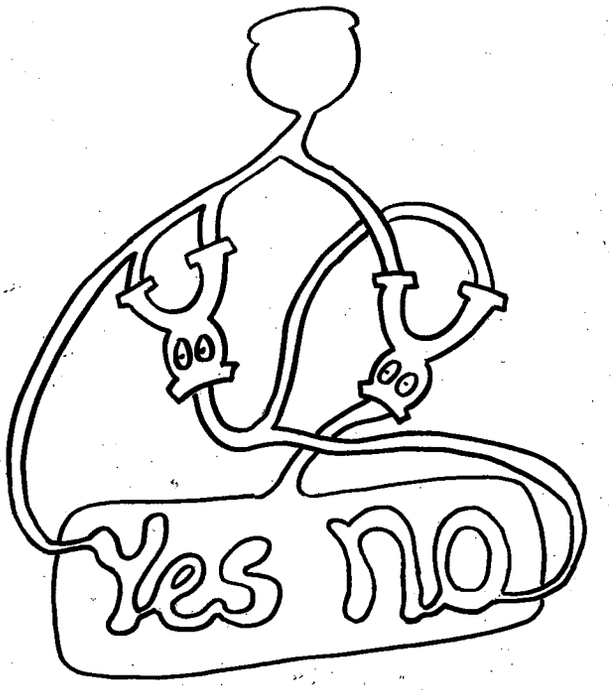
29

computer



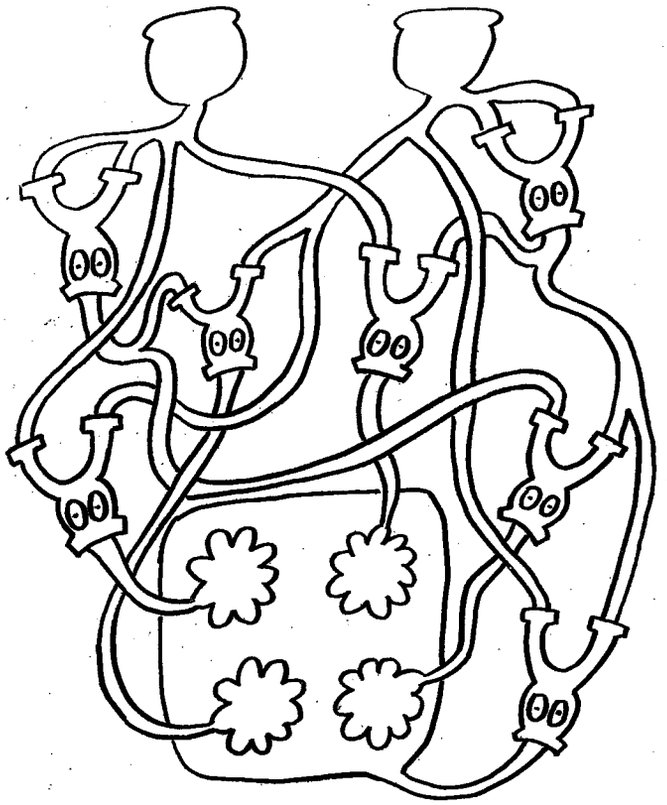
32

computer



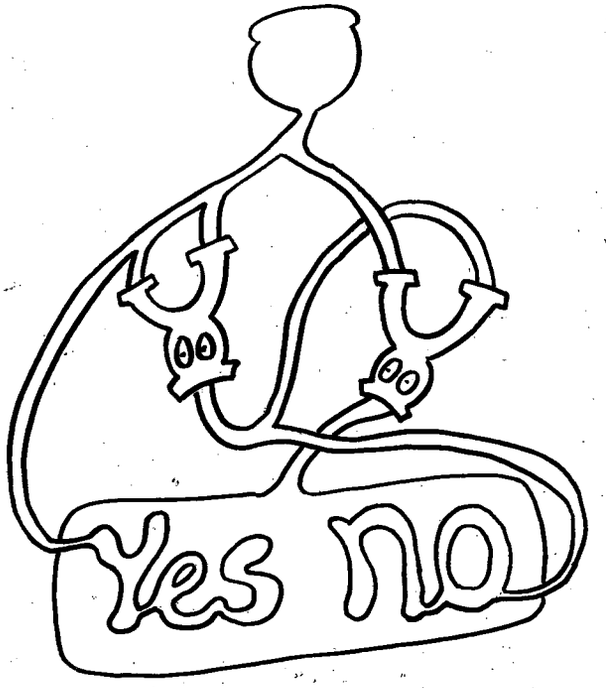
9

computer



30

computer



11

Computers that count

the following computers work with a pair of ▢ that represent numbers (according to an arbitrary system)

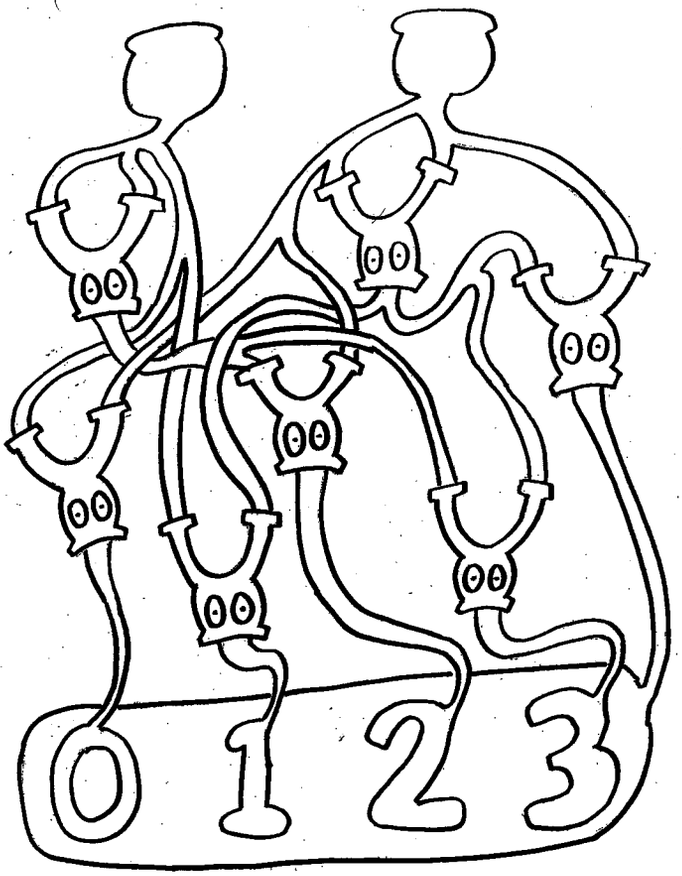
computer ▢▢ takes the colors in its ▢▢ and highlights the numeral they represent 0123

computer ▢▢ takes the colors in its ▢▢ and calculates the colors that correspond to the next number ▢▢

computer ▢▢ is like ▢▢ but constructs the numeral in a seven segment display (so retro!)

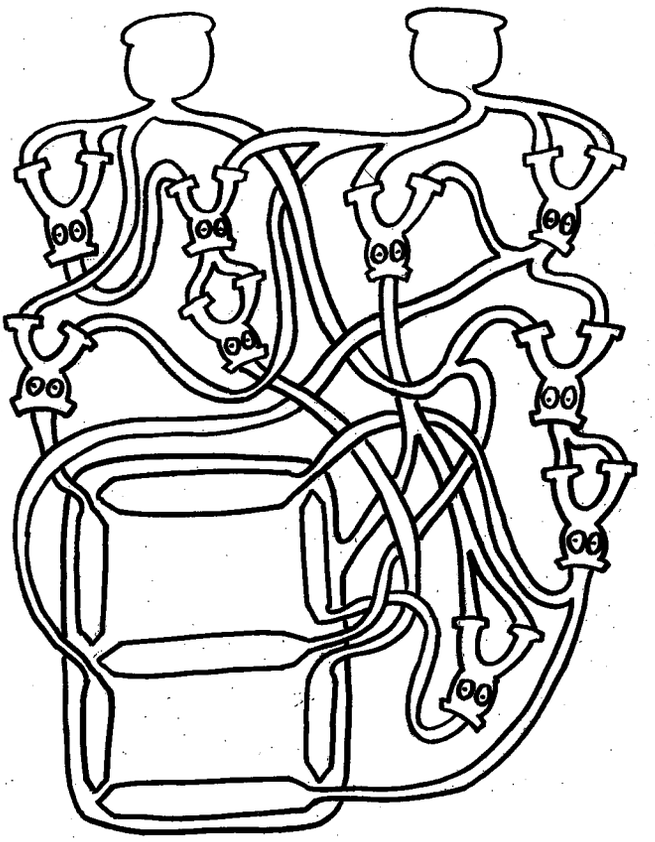
14

computer ▢▢



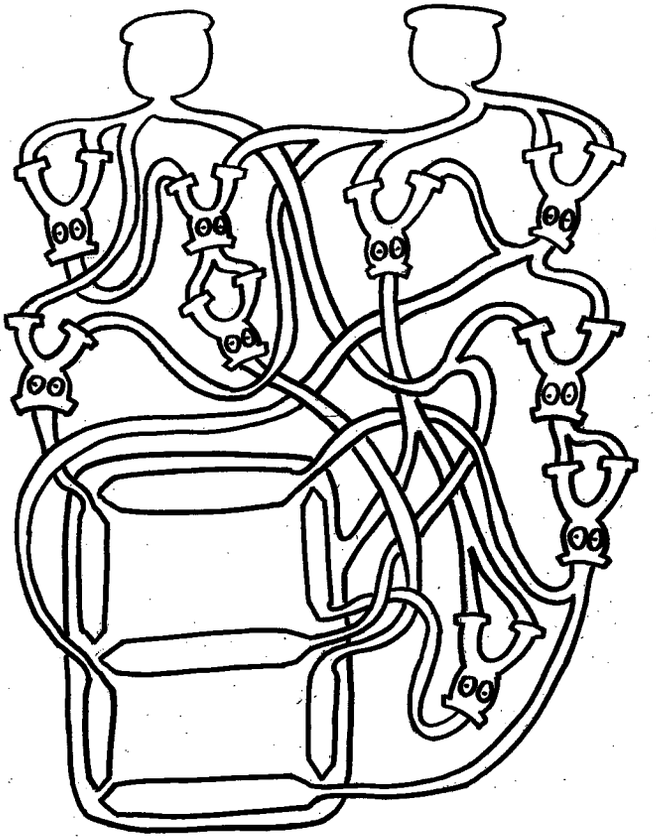
16

computer ▢▢



27

computer ▢▢



25

Computers that play

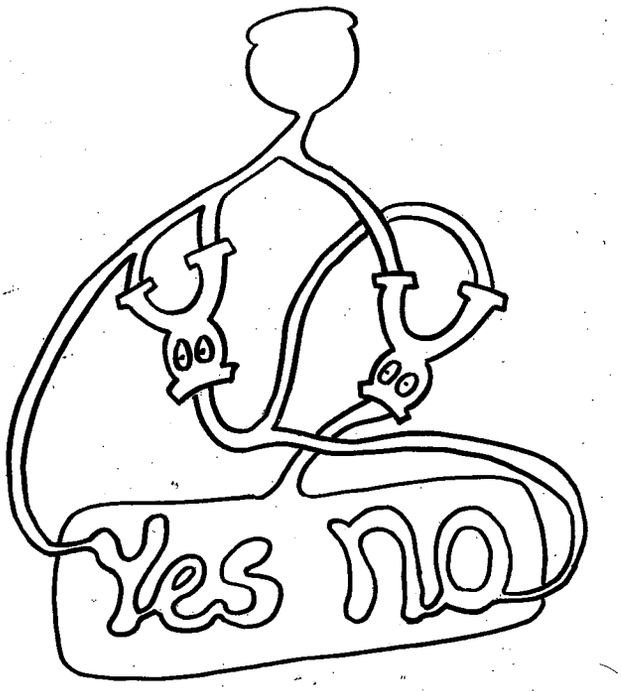
these computers work with [][] that represent the position of a [] inside a [□]. you can move it with a gamepad

[computer [] takes the colors in [][] and highlights one of the [] in the [□]]

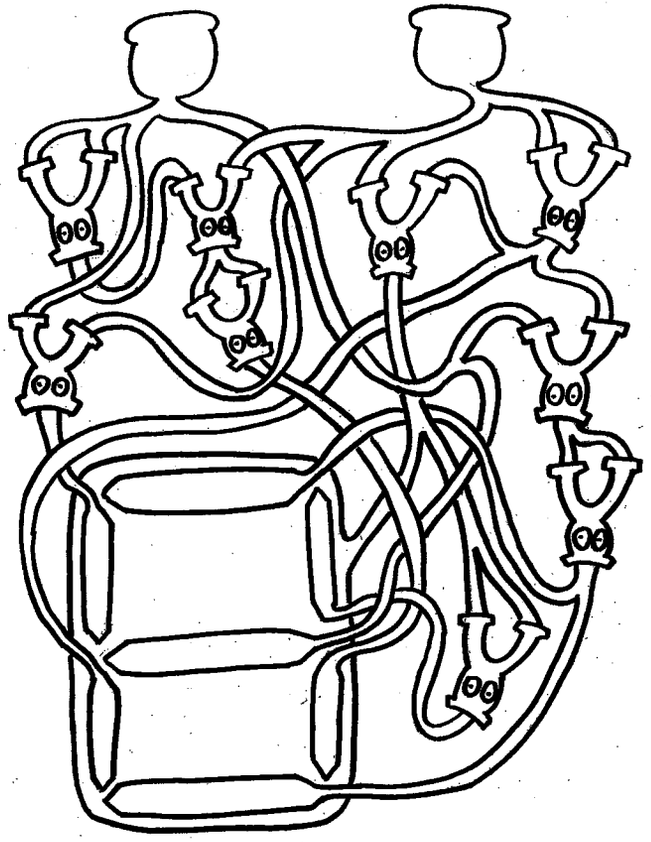
[computer [] takes the colors in [][] and the state of the [] to calculate a new pair of colors []]

[to activate an arrow color it with [□] and color the others with [○]]

computer []



computer []



what you can do

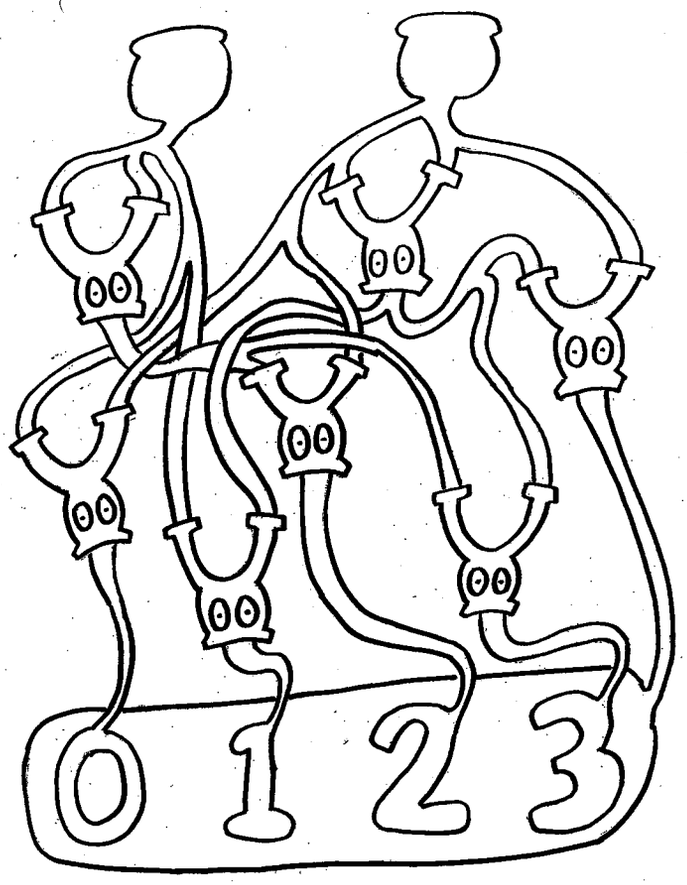
[start with any combination of colors in the [][] of computer [] and see to which number they correspond]

[copy the two colors (same order) from computer [] to [] to get the colors of the next number]

[but is it the next number? use another [] to find out! you can then keep chaining them...]

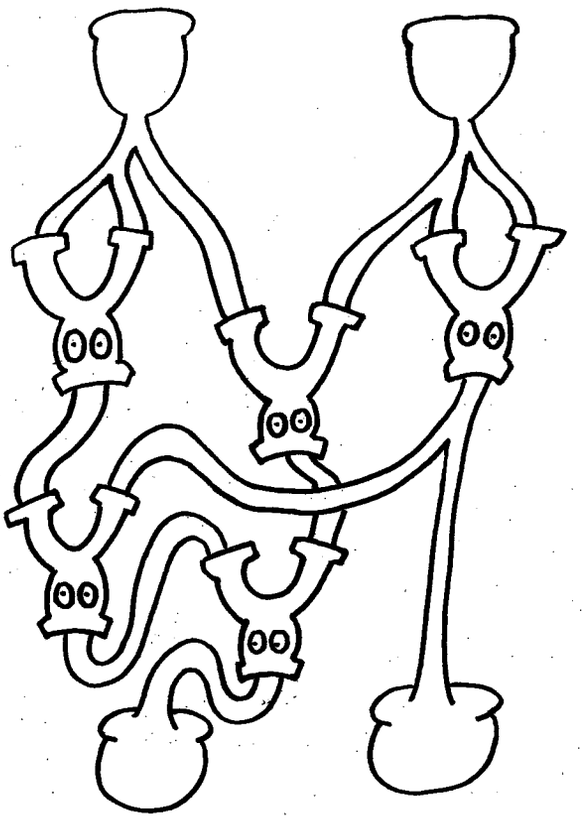
[use computer [□] to decode the same sequence of numbers or to see if you figured out the system [] → number]

computer



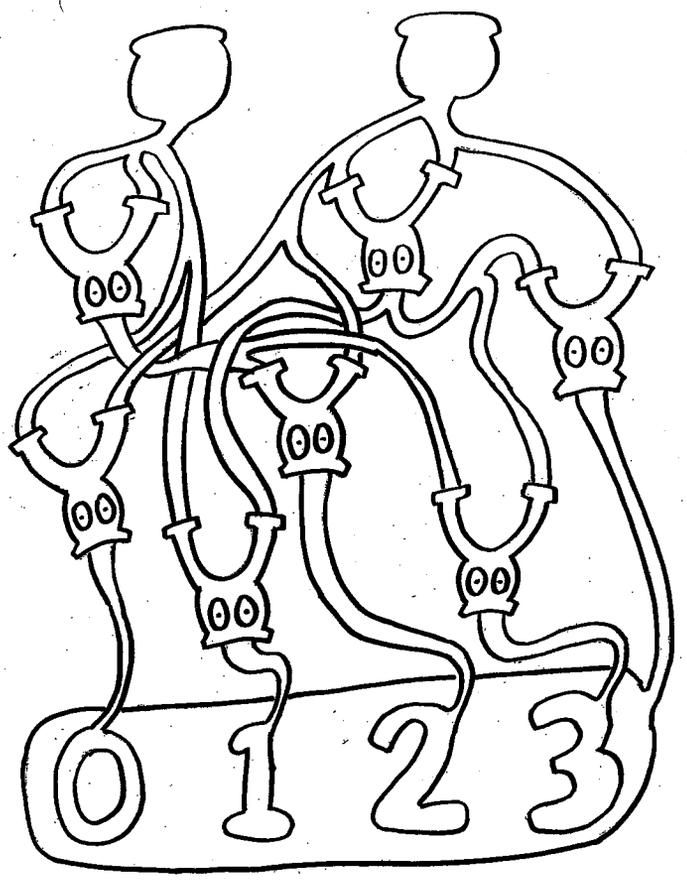
18

computer



23

computer



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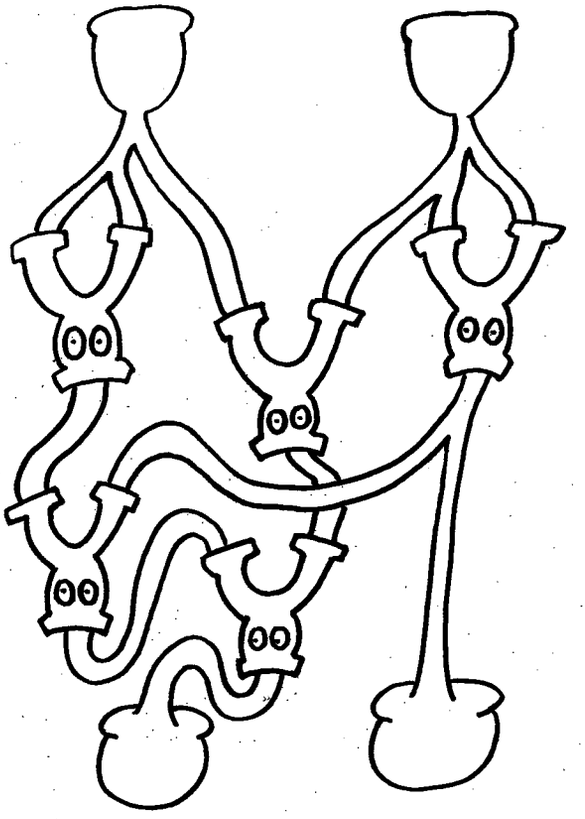
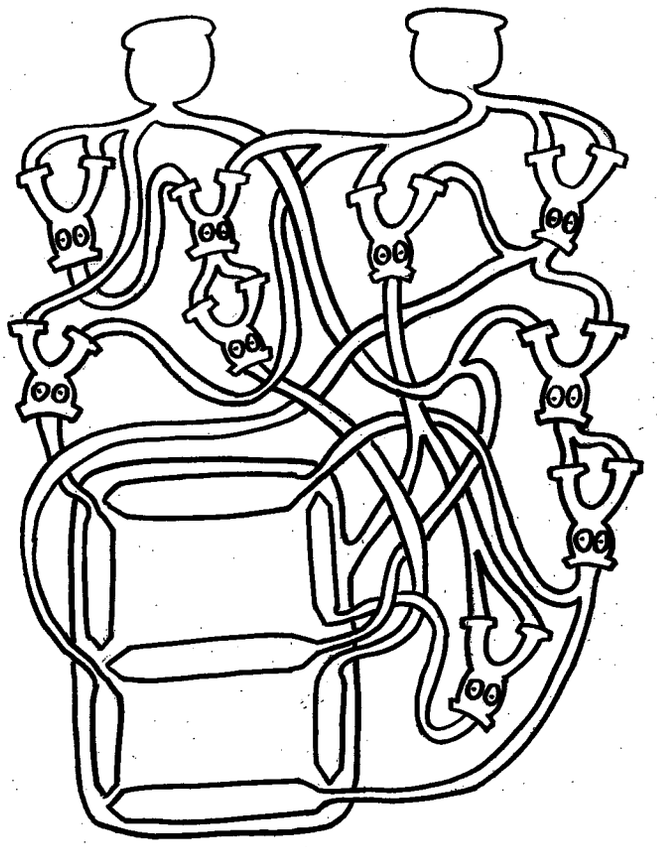
computer



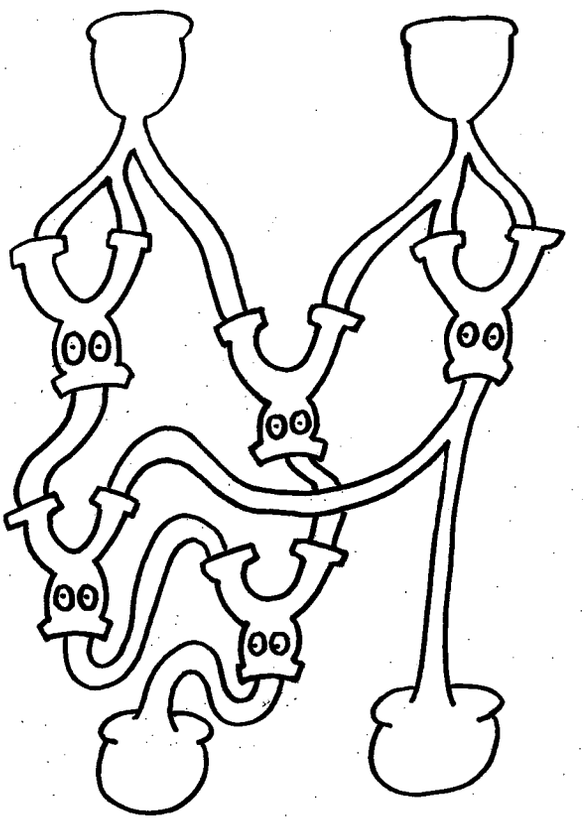
21

Computer



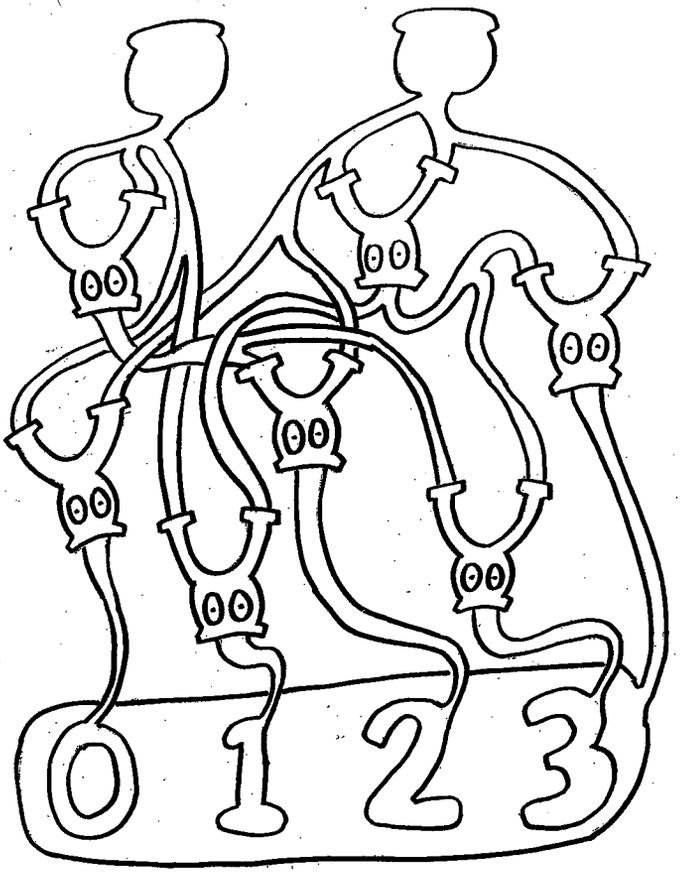
24

Computer



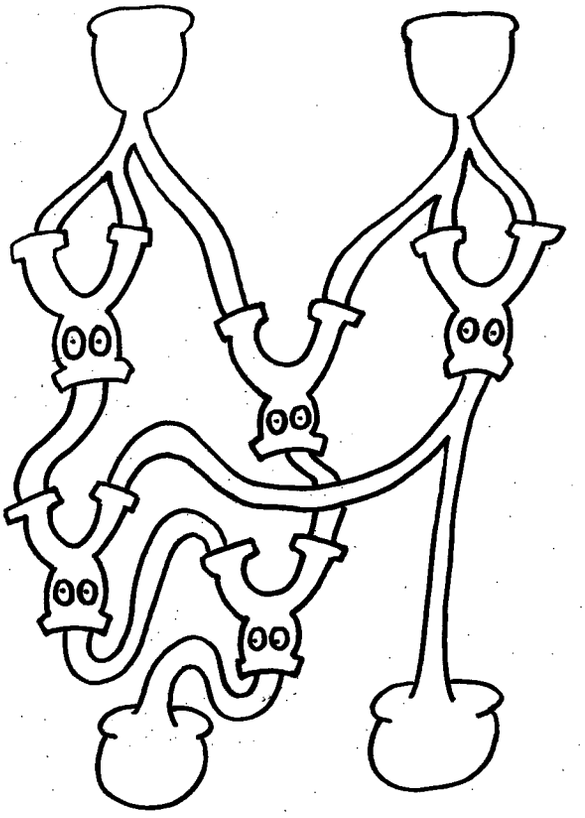
17

Computer



22

Computer



19