1 Introduction

This is a (large) set of example Boolean minimisation questions: each asks you to transform some truth table describing an *n*-input Boolean function into a Boolean expression. Each solution includes

- 1. a reference implementation (produced by forming a SoP expression with a full term for *each* minterm, i.e., row where r = 1), and
- 2. a Karnaugh map annotated with sensible groups, and an optimised implementation based on those groups.

The goal is to focus on producing the latter, since the former is somewhat easier. Keep in mind the following:

- There are 2^{2^n} Boolean functions with n inputs (or 3^{2^n} if you include don't-care states): for small enough n, a complete set of functions is included.
- I made no real effort to order the questions, and only minor effort to avoid duplicates; the questions should include no trivial (in the sense r = 1 or r = 0 for all inputs, e.g., a tautology) cases.
- The questions and solutions are generated automatically, meaning a small but real chance of bugs in my implementation. The number of questions makes this hard to check by hand. If you find a solution you think is wrong for some reason, check what you are doing then let me know: I will try to resolve the problem.

2 2-input problems

2.1 Without don't-care states

Q1.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

Q2.

| y | Z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q3.

| z | r |
|---|---|
| 0 | 1 |
| 1 | 0 |
| 0 | 0 |
| 1 | 0 |
| | 0 |

Q4.

| у | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q5.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |
| | | |

Q7.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |
| | | |

Q8.

| z | r |
|---|---|
| 0 | 1 |
| 1 | 0 |
| 0 | 0 |
| 1 | 1 |
| | 0 |

Q9.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |
| | | |

Q10.

| у | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q11.

| y | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q12.

| у | Z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q13.

| у | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

Q14.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

2.2 With don't-care states

Q15.

| y | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | ? |

Q16.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | ? |
| 1 | 1 | ? |

Q17.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | ? |
| 1 | 0 | ? |
| 1 | 1 | 1 |

Q18.

| у | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | ? |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

Q19.

| y | z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q20.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | ? |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q21.

| у | Z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | ? |

Q22.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

Q23.

| y | Z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | ? |

Q24.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |
| | | |

Q25.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | ? |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q26.

| y | z | r |
|---|---|---|
| 0 | 0 | |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

Q27.

| у | Z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | ? |
| 1 | 0 | 0 |
| 1 | 1 | ? |

Q28.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q29.

| у | Z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | ? |

Q30.

| y | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | ? |
| 1 | 1 | 0 |

| _ | | | |
|------------------------|---|---|--|
| \sim | ~ | 4 | |
| | - | | |
| $\mathbf{\mathcal{V}}$ | J | _ | |

| у | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q32.

| y | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q33.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | ? |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

Q34.

| у | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q35.

| y | z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | ? |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q36.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

Q37.

| у | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | ? |
| 1 | 1 | 1 |

Q38.

| y | z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Q39.

| y | Z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | ? |
| 1 | 1 | 1 |

Q40.

| y | Z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

Q41.

| y | z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | ? |
| 1 | 1 | 0 |

Q42.

| у | z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Q43.

| y | z | r |
|---|---|---|
| 0 | 0 | ? |
| 0 | 1 | 0 |
| 1 | 0 | ? |
| 1 | 1 | 1 |

Q44.

| y | Z | r |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | ? |
| 1 | 1 | 1 |

Q45.

| y | z | r |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | ? |

3 3-input problems

3.1 Without don't-care states

Q46.

| x | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |
| | | | |

Q47.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q48.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q49.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q50.

| х | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q51.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q52.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q53.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q54.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q55.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q56.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q57.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q58.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q59.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q60.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q61.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q62.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q63.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q64.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q65.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q66.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q67.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q68.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q69.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q70.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q71.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q72.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q73.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q74.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q75.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q76.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q77.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q78.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q79.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q80.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q81.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q82.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q83.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q84.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q85.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q86.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q87.

| | \boldsymbol{x} | y | z | r |
|---|------------------|---|---|---|
| Ī | 0 | 0 | 0 | 0 |
| | 0 | 0 | 1 | 0 |
| | 0 | 1 | 0 | 0 |
| ĺ | 0 | 1 | 1 | 0 |
| ĺ | 1 | 0 | 0 | 0 |
| ĺ | 1 | 0 | 1 | 0 |
| | 1 | 1 | 0 | 1 |
| Ĺ | 1 | 1 | 1 | 1 |

Q88.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q89.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q90.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q91.

| x | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q92.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q93.

| y | Z | r |
|---|----------------------------|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |
| | 0 0 1 1 0 0 | 0 0 0 1 1 0 1 1 0 0 0 1 1 1 |

Q94.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

3.2 With don't-care states

Q95.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |
| | | | |

Q96.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | ? |

Q97.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q98.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | ? |

Q99.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q100.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 0 |

Q101.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |

Q102.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|--------|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 ? |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q103.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q104.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | ? |

Q105.

| $\boldsymbol{\mathcal{X}}$ | y | z | r |
|----------------------------|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q106.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q107.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |

Q108.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q109.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q110.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q111.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q112.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|-------------|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 ? ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q113.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |

Q114.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |

Q115.

| $\boldsymbol{\chi}$ | y | z | r |
|---------------------|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q116.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | ? |

Q117.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|--------|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 ? |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 ? |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 |

Q118.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q119.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q120.

| χ | y | z | r |
|--------|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 |

Q121.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q122.

| x | y | z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | ? |

Q123.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 |

Q124.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |

Q125.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q126.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | ? |

Q127.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 0 |

Q128.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 |

Q129.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 |

Q130.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | ? |

Q131.

| х | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | ? |

Q132.

| x | у | z | r |
|---|---|---|--------|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 ? |
| 1 | 1 | 1 | 0 |

Q133.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | ? |
| 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | ? |

Q134.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 |

Q135.

| \boldsymbol{x} | y | z | r |
|------------------|---|---|---|
| 0 | 0 | 0 | 1 |
| 0 | 0 | 1 | 1 |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 |

Q136.

| х | y | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 |
| 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 0 |

Q137.

| $\boldsymbol{\chi}$ | y | z | r |
|---------------------|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 |

Q138.

| x | у | Z | r |
|---|---|---|---|
| 0 | 0 | 0 | ? |
| 0 | 0 | 1 | ? |
| 0 | 1 | 0 | ? |
| 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | ? |
| 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 |

4 4-input problems

4.1 Without don't-care states

Q139.

| w | х | у | Z | r |
|---|---|---|---|-----------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 1 1 0 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 1 1 1 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q140.

| w | \boldsymbol{x} | y | z | r |
|----|------------------|---|---|----------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 | 0 | 1 | 1 | |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| () | 1 | 1 | 0 | 0 1 1 0 1 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 1 1 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q141.

| w | x | y | z | r |
|---|---|---|---|-----------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 1 1 0 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 0 1 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q142.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|--------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q143.

| w | \boldsymbol{x} | y | z | r |
|---|------------------|---|---|----------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 0 1 1 0 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 1 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q144.

| w | х | у | z | r |
|---|---|---|---|---------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 0 0 1 0 1 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 1 |
| 1 | 1 | 0 | 1 | 1 1 |
| 1 | 1 | 1 | 0 | |
| 1 | 1 | 1 | 1 | 1 |

Q145.

| w | χ | y | z | r |
|---|--------|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q146.

| w | х | у | Z | r |
|---|---|---|-----|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 0 1 1 0 0 1 1 1 0 1 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q147.

| w | х | y | z | r |
|------------------|---|---|-----|----------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 0 1 1 0 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 0 0 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 0 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 0 1 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 0 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q148.

| w | \boldsymbol{x} | y | z | r |
|---|------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 1 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 0 |
| 1 | 1 | 0 | 1 | |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q149.

| w | х | у | Z | r |
|-----------------------|---|---|--------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 1 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 0 0 0 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 1 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 0 1 0 1 0 1 0 1 1 1 1 1 1 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q150.

| w | x | y | Z | r |
|---|---|---|---|-------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 0 |
| 0 | 1 | 1 | 1 | 0 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | |
| 1 | 0 | 1 | 1 | 0 1 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | |
| 1 | 1 | 1 | 0 | 1 1 0 |
| 1 | 1 | 1 | 1 | 0 |

Q151.

| w | х | у | Z | r |
|--------|---|---|---|----------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| n | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 1 0 0 0 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| | 0 | 1 | 1 | 1 |
| 1 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 1 0 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q152.

| w | х | у | Z | r |
|--------|---|---|---|------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 1 0 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 1 0 |
| 1 | 0 | 0 | 1 | 1 |
| | 0 | 1 | 0 | 1 0 1 |
| 1 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q153.

| w | r | 1/ | 7 | r |
|-------|---|----|---|-----------------------|
| | x | y | Z | r |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 1 1 1 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 1 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 0 0 |
| 1 | 1 | 1 | 1 | 0 |

Q154.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|--------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q155.

| w | х | у | z | r |
|-------------|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 0 | 0 | 1 | 1 | 1 |
| | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 1 1 0 0 1 1 1 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 1 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 0 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q156.

| w | \boldsymbol{x} | y | z | r |
|-------------|------------------|---|---|------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 0 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 0 0 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 0 1 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 1 1 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q157.

| w | х | y | z | r |
|---|---|---|---|-----------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 0 0 0 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q158.

| w | х | y | Z | r |
|-------------|---|---|-----|--------------------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 0 | 0 | 1 | 1 0 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 0 1 1 |
| 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 1 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 1 0 1 1 0 0 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q159.

| w | х | y | z | r |
|------------------|---|---|--------|-----------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | |
| 0 | 0 | 1 | 0 | 1 1 1 0 0 |
| 0 0 0 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 0 1 0 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 1 1 |
| 1 | 1 | 1 | 1 | 1 |

Q160.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-----|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q161.

| w | х | у | z | r |
|-------------|---|---|---|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 1 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 0 1 1 0 0 1 0 0 1 0 1 0 1 0 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q162.

| 7/1 | ~ | 1/ | ~ | v |
|-------|---|----|---|-----------------------|
| w | х | y | Z | r |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 1 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 0 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 1 1 0 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 0 1 0 |
| 1 | 1 | 0 | 1 | 0 0 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q163.

| w | χ | y | z | r |
|---|--------|---|--------|-------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 1 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | |
| 1 | 1 | 0 | 1 0 | 1 0 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q164.

| w | х | у | Z | r |
|---|---|---|---|-------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 0 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q165.

| w | х | y | z | r |
|------------------|---|---|--------|----------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 0 0 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 | 1 | 0 | 1 | 1 1 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 0 1 1 1 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 0 1 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q166.

| w | х | у | Z | r |
|--------|---|---|---|---|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 0 1 1 0 0 1 1 1 1 1 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q167.

| w | х | у | Z | r |
|--------|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 0 1 0 0 1 1 0 0 |
| 1 | 0 | 0 | 1 | 1 |
| | 0 | 1 | 0 | 0 |
| 1 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q168.

| w | \boldsymbol{x} | y | z | r |
|-------------|------------------|---|--------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 0 | 0 |
| 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 1 0 0 1 0 0 1 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 1 |
| 1 | 1 | 1 | 1 | 1 |

Q169.

| w | \boldsymbol{x} | y | z | r |
|---|------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 0 |
| 0 | 1 | 0 | 1 | 1 1 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q170.

| w | х | у | Z | r |
|-----------------------|---|---|--------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 1 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 0 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 0 1 0 1 1 1 0 1 1 0 1 1 0 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q171.

| w | х | у | z | r |
|-------|---|---|---|---------------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 0 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 0 0 1 0 1 0 |
| 1 | 0 | 1 | 0 | |
| 1 | 0 | 1 | 1 | 1 1 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q172.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-----------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 0 0 1 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q173.

| w | х | y | Z | r |
|---|---|---|-----|----------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 0 1 0 0 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 0 | 1 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | |
| 1 | 1 | 0 | 1 | 1 1 |
| 1 | 1 | 1 | 0 | 1 0 |
| 1 | 1 | 1 | 1 | 0 |

Q174.

| w | х | у | z | r |
|-------------|---|---|---|---------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 0 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 0 0 1 0 1 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | |
| 1 | 0 | 1 | 1 | 1 1 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q175.

| w | х | у | Z | r |
|---|---|---|---|-----|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q176.

| w | х | у | z | r |
|---|---|---|-----|---------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 1 0 1 1 0 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 1 0 0 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q177.

| w | x | y | z | r |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 0 0 1 0 0 1 0 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 1 0 |
| 1 | 1 | 1 | 1 | 0 |

Q178.

| w | χ | y | z | r |
|---|--------|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q179.

| w | х | у | z | r |
|---|---|---|---|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 1 1 0 1 0 0 1 1 1 1 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q180.

| w | x | y | z | r |
|-------------|---|---|--------|----------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 0 0 | 1 | 0 | 1 0 | 1 |
| 0 | 1 | 0 | 1 | 1 1 1 1 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 1 0 1 1 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 1 1 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q181.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 1 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q182.

| w | х | y | Z | r |
|---|---|---|---|---------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 0 0 1 0 1 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 0 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q183.

| w | \boldsymbol{x} | y | z | r |
|-------------|------------------|---|--------|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 1 1 1 0 0 1 0 0 0 1 0 0 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q184.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 0 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 0 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q185.

| w | х | у | z | r |
|-------------|---|---|---|---|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 1 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 1 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 0 0 0 1 0 0 0 1 0 0 |
| 1 | 1 | 1 | 1 | 0 |

Q186.

| w | х | y | z | r |
|------------------|---|---|--------|-----------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | |
| 0 | 0 | 1 | 0 | 1 1 0 1 0 |
| 0 0 0 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 0 1 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 1 1 |
| 1 | 1 | 1 | 1 | 1 |

Q187.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 0 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q188.

| w | х | у | Z | r |
|---|---|---|---|-----|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 0 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 1 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

4.2 With don't-care states

Q189.

| w | х | y | Z | r | |
|-------------|---|---|---|---|--|
| 0 | 0 | 0 | 0 | 1 | |
| 0 | 0 | 0 | 1 | ? | |
| 0 | 0 | 1 | 1 | ? | |
| 0 0 0 | 0 | 1 | 1 | ? | |
| 0 | 1 | 0 | 0 | ? | |
| 0 | 1 | 0 | 1 | ? | |
| 0 0 0 | 1 | 1 | 1 | ? | |
| 0 | 1 | 1 | 1 | 1 | |
| 1 1 | 0 | 0 | 0 | ? | |
| 1 | 0 | 0 | | 1 | |
| 1 | 0 | 1 | 1 | 0 | |
| 1 | 0 | 1 | 1 | ? | |
| 1 1 | 1 | 0 | 1 | 1 | |
| | 1 | 0 | 1 | 1 ? ? ? ? ? 1 0 ? 1 0 | |
| 1 | 1 | 1 | 0 | 0 | |
| 1 | 1 | 1 | 1 | 1 | |
| | | | | | |

Q190.

| w | х | y | Z | r |
|----------------------------|------------------|-------------|---|---|
| 0 | 0 | $0 \\ 0$ | 0 | ? |
| 0 | 0 | 0 | 1 0 | 1 |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 0 |
| 0 0 0 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | ? |
| 1 | | 1 0 0 | 1 0 1 0 1 0 1 0 1 | ? |
| 1 | 0 0 0 0 | | 1 | 0 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | | 1 |
| 1 | 1 | 1 | 1 | ? 1 ? ? 0 1 0 ? ? ? 0 ? ? ? 1 1 ? |
| 1 | 1 | 1 | 1 | ? |
| | | | | |

Q191.

| w | х | у | z | r |
|------------------|-------------|---|-------------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | ? |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 | ? |
| 1 1 1 1 | | 0 | 1 | 1 |
| 1 | 0 0 0 | 1 | 1 0 1 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 ? 0 ? 1 ? ? ? 1 0 0 0 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q192.

| w | х | у | z | r |
|-------------|-----|--------|--------|-----------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 0 ? |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 0 | 0 |
| 0 0 0 | 1 | 0 | | 0 0 ? ? |
| 0 | 1 | 1 | 1 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 1 0 | 1 0 | 1 0 | ? |
| 1 | 0 | 0 | 1 | 1 ? 1 1 ? |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | |
| 1 | 1 | 0 | | 1 |
| 1 | 1 | 1 | 1 0 | 1 0 ? |
| 1 | 1 | 1 | 1 | ? |

Q193.

| w | х | y | z | r |
|---|---|---|-------------|--|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 1 0 | ? |
| 1 | 0 | 0 | 0 | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | 1 ? 0 0 0 ? ? ? 1 0 ? ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q194.

| w | х | у | Z | r |
|------------------|-------------|---|-------------|---|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 0 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 1 | ? |
| | 0 | 0 | 0 | ? |
| 1 1 1 1 | | 0 | 1 | 1 |
| 1 | 0 0 0 | 1 | 1 0 1 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 0 0 0 0 1 0 ? ? 1 1 1 0 0 0 0 ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | ? |

Q195.

| w | х | y | z | r |
|-------------|---|-----|---|---------------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 2 |
| 0 | 1 | 0 | 0 | 1 |
| 0 0 0 | 1 | 0 | | 1 0 ? 1 1 ? 0 |
| 0 | 1 | 1 | 1 | 2 |
| 0 | 1 | | 1 | 0 |
| 1 | 0 | 1 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| | | 1 | | 0 |
| 1 | 0 | | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 1 0 0 0 ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | ? |

Q196.

| w | х | y | z | r |
|---|---|---|-----|-----------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 0 0 0 ? |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | - 1 | 0 |
| 1 | 0 | 0 | 0 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | |
| 1 | 0 | 1 | 1 | 0 0 1 ? |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q197.

| w | х | у | z | r |
|------------------|-------------|---|--------|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 | ? |
| 0 0 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 | ? |
| 1 1 1 1 | 0 | 0 | 1 | ? |
| 1 | 0 0 0 | 1 | 1 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 0 0 ? ? ? ? ? ? 0 1 0 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q198.

| w | х | 1/ | z | r |
|------------------|---|----------|-----|--|
| | | <u>y</u> | | 0 |
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 0 0 0 | 1 | 0 | | ? |
| 0 | 1 | 1 | 1 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 0 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 1 0 1 ? 1 0 ? 0 1 1 1 0 1 0 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |

Q199.

| w | х | y | z | r |
|---|---|---|-----|---------------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | - 1 | 1 ? 0 0 0 1 ? |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 0 | 1 |
| 1 | 0 | 0 | 0 | ? |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 ? ? |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | 1 ? 0 ? |
| 1 | 1 | 1 | 1 | ? |
| | | | | • |

Q200.

| w | х | y | Z | r |
|-----------------------|---|---|-------------|-------------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | | ? |
| 0 | 0 | 1 | 1 0 | ? |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 1 | ? |
| 0 0 0 0 0 | 1 | 1 | | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 1 1 1 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 1 0 1 | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 ? ? ? ? ? ? ? ? 1 1 0 ? 1 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q201.

| w | \boldsymbol{x} | y | z | r |
|------------------|------------------|---|--------|---|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 0 | 0 |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 0 1 1 1 0 0 ? 0 ? |
| 1 | 1 | 0 | | 1 |
| 1 | 1 | 1 | 1 0 | ? |
| 1 | 1 | 1 | 1 | 1 |

Q202.

| w | х | y | z | r |
|--------|---|---|-------------|-------------|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 0 ? ? |
| 0 | 1 | 0 | 1 | ? |
| 0 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 0 1 0 | 1 ? ? |
| 1 | 0 | 0 | 0 | |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q203.

| w | \boldsymbol{x} | y | z | r |
|---|------------------|---|--------|--|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 0 | 0 |
| 0 | 0 | 1 | 0 | 0 1 ? |
| 0 | 0 | 1 | 1 | |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 | ? |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 1 0 ? 1 ? 1 0 1 0 0 0 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q204.

| w | χ | y | z | r |
|------------------|--------|---|--------|---|
| 0 | 0 | 0 | 0 | 1 ? |
| 0 | 0 | 0 | 1 | |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 0 0 0 | 1 | 0 | | ? |
| 0 | 1 | 1 | 1 0 | ? |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 0 | 0 |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 0 | 1 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 1 0 1 ? ? 0 0 ? 1 ? 1 1 1 |
| 1 | 1 | 0 | | 1 |
| 1 | 1 | 1 | 1 0 | 1 |
| 1 | 1 | 1 | 1 | ? |

Q205.

| w | $\boldsymbol{\chi}$ | y | z | r |
|--------|---------------------|---|-----|-----------------------|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 ? 0 |
| 0 | 0 | 1 | 1 | |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 1 0 1 ? |
| 0 | 1 | 1 | 0 | 0 |
| 0 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 ? ? |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | ? |
| | | | | |

Q206.

| w | х | y | Z | r |
|-------------|--------|---|--------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 0 0 | 0 | 0 | 1 0 | 0 |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 0 | ? |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | ? |
| 1 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 1 0 | 0 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 0 ? ? 1 0 ? 1 ? 0 ? 1 1 0 ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q207.

| w | \boldsymbol{x} | y | z | r |
|------------------|------------------|---|---|----------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 0 0 0 | 1 | 0 | | 0 1 0 |
| 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 ? 0 ? 0 ? |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 1 |

Q208.

| w | х | у | z | r |
|---|---|---|-----|-----------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 0 | ? |
| 0 | 1 | 1 | 1 | 1 0 1 0 ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 0 | 1 | 0 1 ? |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q209.

| w | \boldsymbol{x} | y | z | r |
|-------------|------------------|---|---|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | ? |
| 0 0 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 1 ? 0 1 1 ? 1 1 0 ? 0 ? |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | |
| 1 | 1 | 1 | 1 | 1 |

Q210.

| w | х | y | Z | r |
|-------------|---|---|--------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 0 0 | 1 | 0 | | 1 |
| 0 | 1 | 1 | 1 0 | ? |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 1 1 0 1 ? ? ? 0 1 0 ? 0 0 0 |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q211.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 ? |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 1 1 ? |
| 1 | 0 | 0 | 0 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q212.

| w | \boldsymbol{x} | y | z | r |
|-----|------------------|---|---|---------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 1 1 1 0 0 ? |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| | 0 | 1 | 0 | ? |
| 1 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 0 1 ? ? 1 1 |
| 1 | 1 | 1 | 0 | 1 0 |
| 1 | 1 | 1 | 1 | 0 |

Q213.

| w | x | y | Z | r |
|------------------|---|---|--------|-----------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 0 0 0 | 1 | 0 | 1 0 | 0 1 1 ? |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 0 0 1 ? |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 |

Q214.

| w | $\boldsymbol{\chi}$ | y | z | r |
|---|---------------------|---|---|-------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 0 ? |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q215.

| w | х | y | Z | r |
|-----|---|---|--------|--|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 | 1 |
| 1 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 0 | 1 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | 1 ? ? 1 1 0 ? 1 1 1 ? ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q216.

| w | x | y | z | r |
|------------------|---|---|--------|---|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 0 | ? |
| 0 0 0 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 1 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 0 ? ? 0 1 1 0 ? 1 1 0 ? |
| 1 | 1 | 0 | | 0 |
| 1 | 1 | 1 | 1 0 | ? |
| 1 | 1 | 1 | 1 | 0 |

Q217.

| w | x | у | z | r |
|---|---|---|------------------|--------------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 0 1 0 | ? |
| 1 | 0 | 0 | 0 | ? 0 ? 0 ? ? 1 ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | ? |
| | | | | |

Q218.

| w | х | y | Z | r |
|-----|---|---|--------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | ? |
| 1 1 | | 0 | 1 | 1 |
| 1 | 0 | 1 | 1 0 | ? |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 0 0 1 1 0 1 ? 1 ? 0 0 0 1 ? |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | ? |

Q219.

| w | х | у | z | r |
|-------------|---|---|--------|--------------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 0 | 1 |
| 0 0 0 | 1 | 0 | 1 | 1 ? ? ? ? |
| 0 | 1 | 1 | 1 0 | ? |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | 1 0 ? 0 ? 0 0 0 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |

Q220.

| w | χ | y | z | r |
|--------|--------|--------|------------------|---------------------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | |
| 0 | 0 | 1 | 1 0 | ? |
| 0 | 0 | 1 | 1 0 | ? |
| 0 | 1 | 1 0 | 0 | 1 ? ? ? |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 0 | 1 |
| 0 0 | 1 | 1 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 1 0 | 1 |
| 1 | 0 | 0 | | 1 |
| 1 | 0 | 1 | 1 0 | 0 |
| 1 | 0 | | 1 0 | 0 |
| 1 | 1 | 1 0 | 0 | ? |
| 1 1 | 1 | 0 | 1 | 1 1 1 1 0 0 ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q221.

| w | х | у | Z | r |
|--------|---|---|---|--|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 0 |
| () | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | ? |
| 1 1 | 0 | 0 | 1 | 0 |
| 1 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 1 0 0 ? ? 0 0 0 0 1 1 |
| 1 | 1 | 1 | 0 | 1 0 |
| 1 | 1 | 1 | 1 | 0 |

Q222.

| w | х | y | z | r |
|-----------------------|---|---|---|---------------------------------|
| | 0 | 0 | 0 | 0 |
| 0 0 0 0 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 0 0 1 1 ? |
| 0 | 0 | 1 | | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 0 | | 1 |
| 0 | 1 | 1 | 1 | ? |
| 0 | 1 | 1 | | 1 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | 1 1 ? 0 0 ? ? |
| 1 | 1 | 1 | 1 | ? |

Q223.

| w | х | y | z | r |
|--------|---|--------|--------|---|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 0 | 1 | 1 0 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 1 0 | 0 |
| 0 | 1 | 1 1 | 1 | ? |
| 1 | 0 | 0 | 1 0 | 1 |
| 1 | 0 | 0 | | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 1 | 0 | | 1 0 | 1 |
| 1 | 1 | 1 0 | 0 | 0 |
| 1 | 1 | 0 | 1 0 | ? |
| 1 | 1 | 1 | 0 | 1 0 0 0 ? 0 ? 1 0 1 1 0 ? |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q224.

| w | $\boldsymbol{\chi}$ | y | z | r |
|-----------------------|---------------------|---|-------------|---|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 0 | ? |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 0 0 0 0 | 1 | 1 | 1 | ? |
| 0 | 1 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 1 | ? |
| 0 0 0 | 1 | 1 | | 0 |
| 1 | 0 | 0 | 1 0 | 0 |
| 1 1 1 | 0 | Ω | 1 | 0 |
| 1 | 0 0 0 | 1 | 1 0 1 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | ? ? 1 0 ? ? ? 0 0 0 0 0 0 0 0 0 0 |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 0 |

Q225.

| w | х | y | z | r |
|-----------------------|---|---|---|---|
| 0 | 0 | 0 | 0 | ? |
| 0 0 0 0 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 0 | | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | ? 1 1 1 0 0 ? 0 1 ? 0 1 ? |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | ? |

Q226.

| w | х | y | z | r |
|--------|---|---|-----|------------------|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | ? |
| 0 | 1 | 0 | 1 | ? ? ? 0 0 ? ? ? |
| 0 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 0 | ? |
| 1 | 0 | 0 | 0 | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 0 0 0 |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q227.

| w | х | y | Z | r |
|-------------|--------|---|--------|---|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | 0 |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 | 1 |
| 0 | 1 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | ? |
| 0 | 1 | 1 | 1 | ? 0 ? 1 0 ? 0 1 0 1 0 1 ? |
| 1 | 0 | 0 | 0 | 1 |
| 1 1 1 | | 0 | 1 | 0 |
| 1 | 0 | 1 | 1 0 | 1 |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | |
| 1 | 1 | 1 | 1 | 1 |

Q228.

| w | x | y | Z | r |
|------------------|---|---|--------|--|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 0 | ? |
| 0 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 1 0 | 1 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 | ? |
| 1 | 0 | 0 | 1 | 1 0 1 ? 1 1 1 ? 0 0 ? ? |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 1 0 | 1 1 |
| 1 | 1 | 1 | 1 | 1 |

Q229.

| w | х | у | Z | r |
|---|---|---|---|--------------------------------------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | ? |
| 0 | 1 | 0 | 1 | 1 0 ? 0 1 0 0 ? |
| 0 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 | 1 | 0 |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | Λ | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | 1 |
| 1 | 1 | 0 | 1 | 0 1 0 |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 1 |

Q230.

| w | х | у | Z | r |
|-----------------------|---|---|-------------|---|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | | ? |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 1 | 0 |
| 0 0 0 0 0 | 1 | 1 | | ? |
| 1 1 1 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 1 | 1 0 1 | 1 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 0 |
| 1 | 1 | 0 | 1 | ? ? 0 0 ? ? 0 ? ? ? 0 1 ? |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | ? |

Q231.

| 713 | 24 | 11 | ~ | 14 |
|------------------|----|----|---|----------------------------|
| w | х | y | Z | r |
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 ? |
| 0 | 0 | 1 | 0 | ? |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | ? |
| 0 0 0 0 | 1 | 0 | 1 | ? |
| 0 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 0 | 1 | 1 ? ? 0 ? 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 0 1 0 ? |
| 1 | 1 | 0 | 1 | ? |
| 1 | 1 | 1 | 0 | 1 0 |
| 1 | 1 | 1 | 1 | 0 |

Q232.

| w | х | у | Z | r |
|-------------|---|-------------|------------------|-----------------------------|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 1 0 | 1 0 | ? |
| 0 0 0 | 1 | 0 | 1 0 1 0 | 0 |
| 0 0 1 | 1 | 1 | 0 | 1 |
| 0 | 1 | 1 1 0 | 1 | 0 |
| 1 | 0 | 0 | 0 | ? |
| 1 | 0 | 0 | | ? |
| 1 | 0 | 1 | 1 0 | ? |
| 1 | 0 | | 1 | 0 |
| 1 | 1 | 1 0 | 1 0 | ? |
| 1 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | ? 0 0 ? 0 1 0 ? ? ? 0 ? 1 0 |
| 1 | 1 | 1 | 1 | ? |

Q233.

| w | х | у | z | r |
|------------------|-------------|---|-------------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 | 1 |
| 1 1 1 1 | | 0 | | ? |
| 1 | 0 0 0 | 1 | 1 0 1 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | 1 0 ? 0 0 0 0 ? 1 ? ? 0 ? |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | ? |

Q234.

| w | $\boldsymbol{\mathcal{X}}$ | y | z | r |
|------------------|----------------------------|---|--------|---|
| 0 | 0 | 0 | 0 | 1 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 0 | 1 |
| 0 0 0 0 | 1 | 0 | | 1 |
| 0 | 1 | 1 | 1 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 0 | ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | ? |
| 1 | 1 | 0 | 0 | 1 1 0 1 1 0 1 ? 0 ? ? 0 0 1 1 |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | 1 |
| 1 | 1 | 1 | 1 | 1 |

Q235.

| w | х | у | z | r |
|---|---|---|---|--------|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1? |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 |
| 1 | 0 | 0 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 ? |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |

Q236.

| w | х | у | Z | r |
|----------------------------|---|-------------|----------------------------|---|
| 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | | 0 |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 1 0 | 1 | ? |
| 0 | 1 | 0 | 1 0 1 0 1 0 | ? |
| 0 | 1 | 0 | 1 | 0 |
| 0 | 1 | 1 | 0 | ? |
| 0 0 0 0 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 1 | ? |
| 1 | 0 | 0 | 1 0 1 0 | 1 |
| 1 | 0 | 1 | 0 | ? |
| 1 | 0 | 1 | 1 | 0 |
| 1 | 1 | 0 | 0 | ? |
| 1 1 1 1 1 1 | 1 | 0 | 1 | 0 0 0 ? ? 0 ? ? ? ? 0 ? ? |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 1 |

Q237.

| w | х | у | Z | r |
|-----------------------|---|---|---|---|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | ? |
| 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 |
| 0 | 1 | 0 | 1 | 1 |
| 0 0 0 0 0 | 1 | 0 | | ? |
| 0 0 | 1 | 1 | 1 | 0 |
| 0 | 1 | 1 | 1 | ? |
| 1 | 0 | 0 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 1 | ? |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 0 1 ? 0 ? 0 0 ? 1 1 0 ? |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 1 |
| | | | | |

Q238.

| w | х | у | z | r |
|-------------|---|---|---|--|
| 0 | 0 | 0 | 0 | ? |
| 0 | 0 | 0 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 1 | 1 | ? |
| 0 | 1 | 0 | 0 | 0 |
| 0 0 0 | 1 | 0 | 1 | 1 |
| 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 0 | 1 1 ? 0 1 0 1 ? 0 0 1 ? 0 0 1 ? |
| 1 | 0 | 0 | 1 | 0 |
| 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | ? |
| 1 | 1 | 0 | 1 | 0 |
| 1 | 1 | 1 | 0 | ? |
| 1 | 1 | 1 | 1 | 0 |
| | | | | |