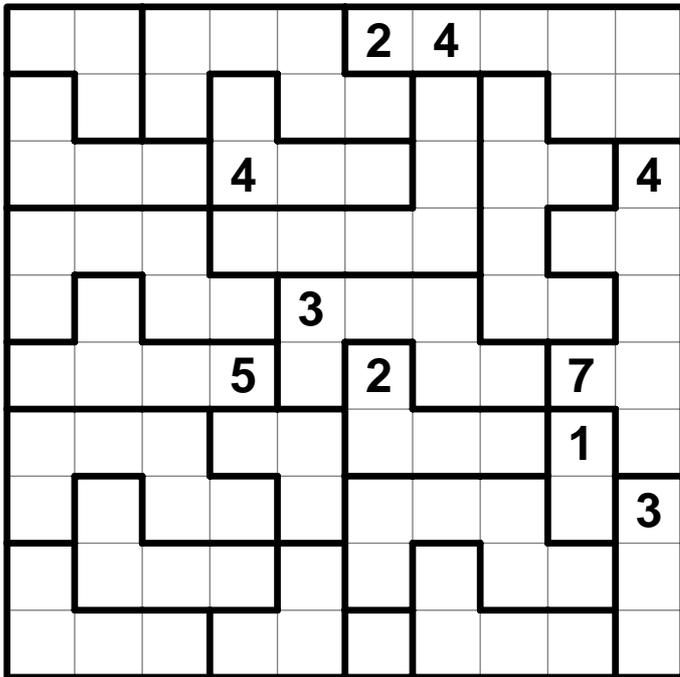
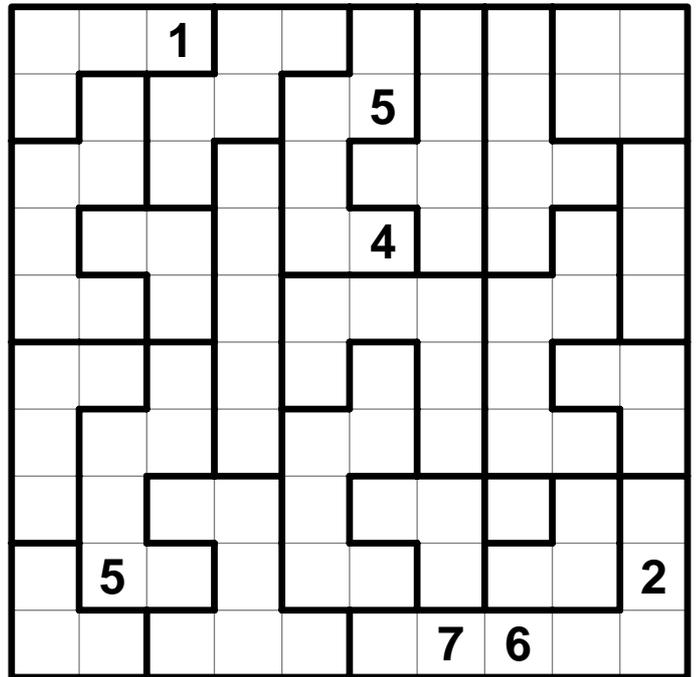


Ripple #1



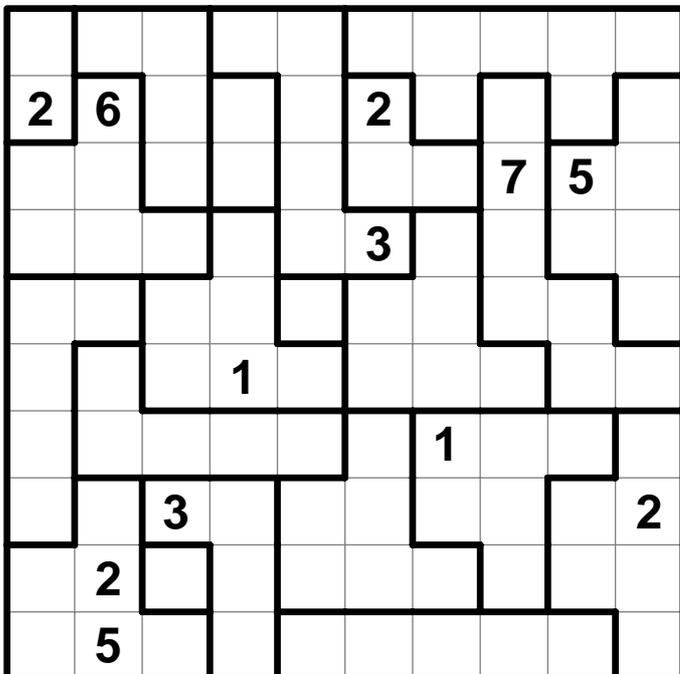
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Ripple #2



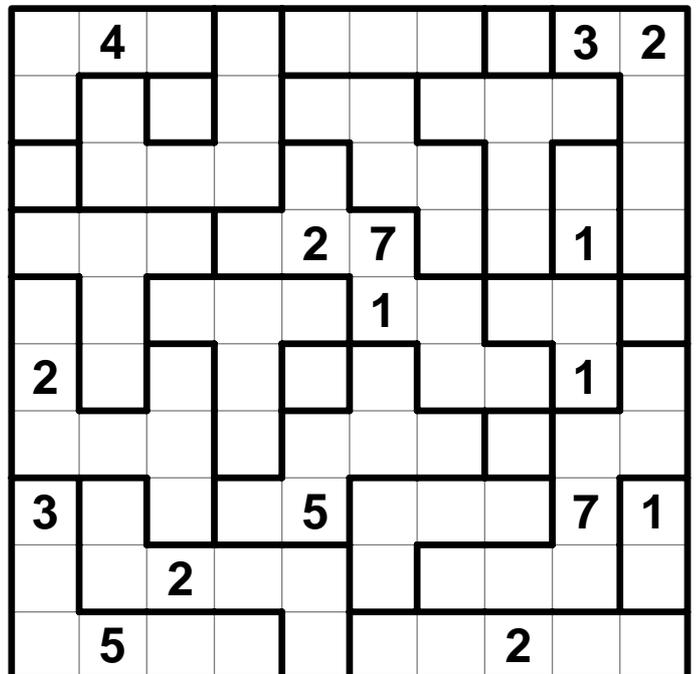
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Ripple #3



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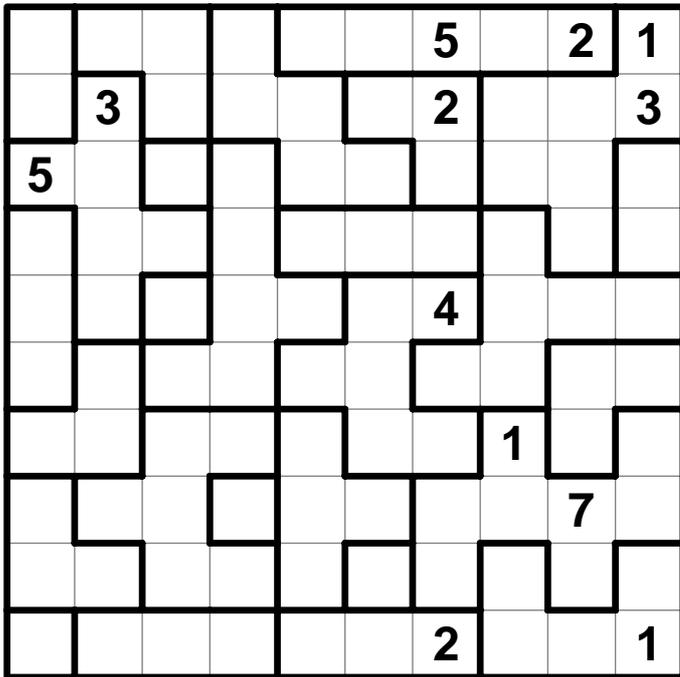
Ripple #4



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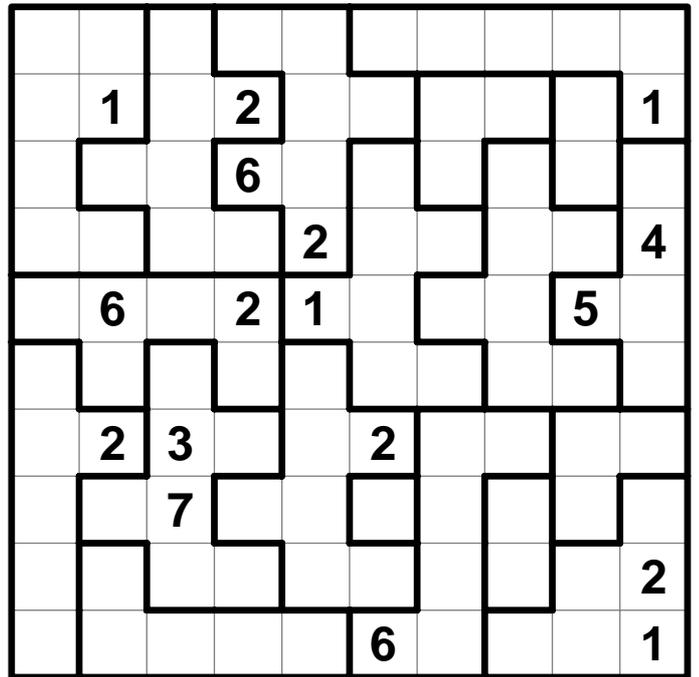
The heavy lines indicate areas called cages. Fill each cage with unique digits, counting up from 1. For example, a 1-cell cage must contain the number 1, a 2-cell cage contains 1 and 2, a 5-cell cage contains 1 through 5, and so on. These numbers may appear in any order within the cage. If two identical numbers appear in the same row or column, at least that many cells must separate them. For example, if two 3s appear in the same column, they must be separated by at least three other cells that do not contain 3.

Ripple #5



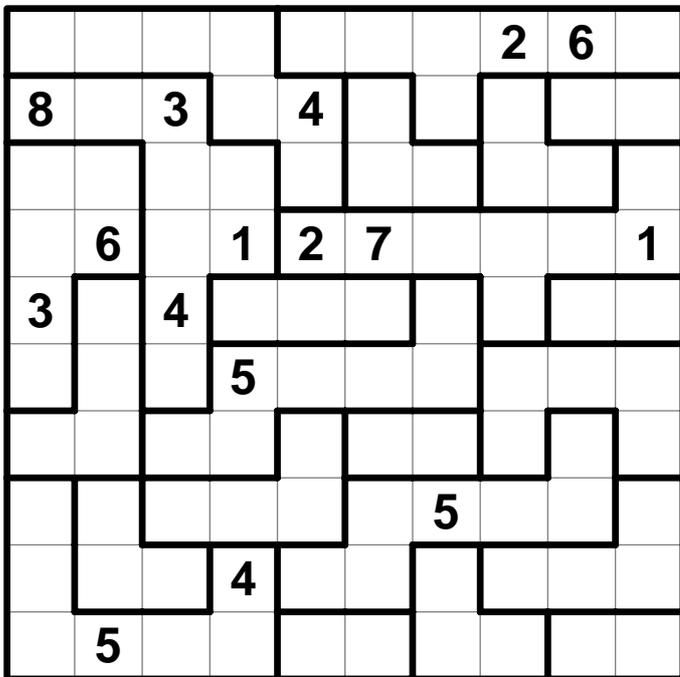
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Ripple #6



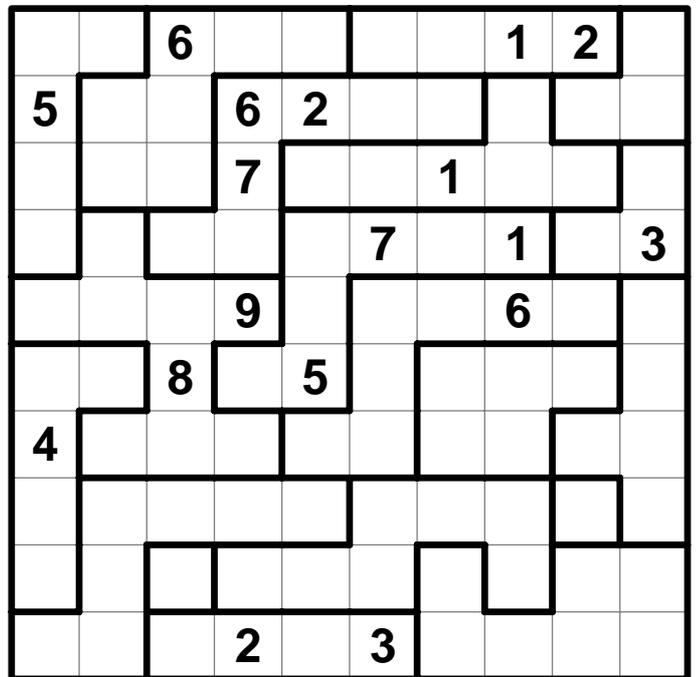
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Ripple #7



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Ripple #8



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The heavy lines indicate areas called cages. Fill each cage with unique digits, counting up from 1. For example, a 1-cell cage must contain the number 1, a 2-cell cage contains 1 and 2, a 5-cell cage contains 1 through 5, and so on. These numbers may appear in any order within the cage. If two identical numbers appear in the same row or column, at least that many cells must separate them. For example, if two 3s appear in the same column, they must be separated by at least three other cells that do not contain 3.

Ripple #9

|   |  |   |   |   |   |   |   |   |
|---|--|---|---|---|---|---|---|---|
| 1 |  |   |   |   |   | 4 | 2 |   |
|   |  |   | 2 | 7 | 3 |   |   | 6 |
| 1 |  |   |   |   |   | 5 | 2 |   |
|   |  |   |   |   |   |   |   | 3 |
| 2 |  |   | 2 |   |   |   |   |   |
|   |  |   |   |   | 3 |   |   | 6 |
|   |  |   |   |   |   |   | 7 | 7 |
|   |  |   |   |   |   |   | 7 | 1 |
|   |  | 1 |   |   |   |   |   |   |
| 7 |  | 5 | 1 |   |   |   | 1 |   |
| 5 |  |   |   |   | 7 |   |   | 3 |

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Ripple #10

|  |  |   |   |  |  |   |   |  |   |
|--|--|---|---|--|--|---|---|--|---|
|  |  | 3 | 7 |  |  |   | 5 |  |   |
|  |  |   | 2 |  |  |   |   |  |   |
|  |  |   |   |  |  |   |   |  |   |
|  |  |   |   |  |  |   |   |  |   |
|  |  |   |   |  |  |   |   |  | 1 |
|  |  |   |   |  |  |   |   |  | 5 |
|  |  |   |   |  |  | 1 |   |  |   |
|  |  |   | 3 |  |  |   |   |  |   |
|  |  |   |   |  |  |   |   |  |   |
|  |  | 2 |   |  |  |   |   |  |   |

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Ripple #11

|   |   |  |   |  |   |   |  |   |
|---|---|--|---|--|---|---|--|---|
|   | 6 |  |   |  |   |   |  | 1 |
|   |   |  |   |  |   |   |  |   |
|   |   |  |   |  |   |   |  |   |
| 1 |   |  |   |  |   |   |  |   |
|   |   |  |   |  | 1 |   |  |   |
|   |   |  | 4 |  | 6 | 3 |  |   |
|   |   |  |   |  |   | 7 |  |   |
|   |   |  |   |  | 2 |   |  |   |
|   |   |  |   |  |   |   |  |   |
|   |   |  | 4 |  |   |   |  |   |
|   |   |  |   |  |   |   |  |   |

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Ripple #12

|   |   |  |   |  |   |   |  |  |
|---|---|--|---|--|---|---|--|--|
|   |   |  | 1 |  |   |   |  |  |
|   |   |  |   |  |   | 5 |  |  |
|   |   |  |   |  |   |   |  |  |
| 1 | 3 |  |   |  |   |   |  |  |
| 6 |   |  |   |  |   | 5 |  |  |
|   |   |  |   |  |   |   |  |  |
|   |   |  |   |  | 3 |   |  |  |
|   |   |  |   |  |   |   |  |  |
|   |   |  |   |  |   |   |  |  |
| 1 |   |  |   |  |   |   |  |  |
|   |   |  | 2 |  |   |   |  |  |

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The heavy lines indicate areas called cages. Fill each cage with unique digits, counting up from 1. For example, a 1-cell cage must contain the number 1, a 2-cell cage contains 1 and 2, a 5-cell cage contains 1 through 5, and so on. These numbers may appear in any order within the cage. If two identical numbers appear in the same row or column, at least that many cells must separate them. For example, if two 3s appear in the same column, they must be separated by at least three other cells that do not contain 3.

# Answers

# Super-Tough Ripple Effect, Volume 2, Book 84

#1

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 2 | 1 | 3 | 2 | 4 | 5 | 6 | 3 |
| 4 | 2 | 6 | 3 | 5 | 4 | 2 | 3 | 1 | 7 |
| 2 | 1 | 3 | 4 | 2 | 1 | 3 | 6 | 5 | 4 |
| 5 | 3 | 2 | 1 | 4 | 6 | 5 | 2 | 3 | 1 |
| 1 | 2 | 4 | 6 | 3 | 5 | 2 | 4 | 1 | 2 |
| 3 | 4 | 1 | 5 | 6 | 2 | 4 | 1 | 7 | 5 |
| 6 | 5 | 2 | 3 | 1 | 4 | 1 | 3 | 1 | 6 |
| 4 | 2 | 3 | 1 | 2 | 1 | 6 | 5 | 2 | 3 |
| 2 | 3 | 1 | 4 | 1 | 3 | 1 | 2 | 4 | 1 |
| 3 | 1 | 4 | 2 | 3 | 1 | 2 | 4 | 3 | 2 |

#2

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 4 | 1 | 3 | 1 | 6 | 5 | 3 | 2 | 4 |
| 3 | 1 | 4 | 2 | 3 | 5 | 2 | 4 | 3 | 1 |
| 4 | 3 | 5 | 1 | 2 | 3 | 4 | 1 | 5 | 2 |
| 2 | 1 | 3 | 5 | 1 | 4 | 1 | 2 | 1 | 3 |
| 5 | 6 | 2 | 3 | 4 | 1 | 2 | 3 | 6 | 1 |
| 3 | 2 | 1 | 4 | 3 | 2 | 6 | 5 | 3 | 2 |
| 1 | 4 | 6 | 2 | 1 | 3 | 5 | 2 | 4 | 1 |
| 4 | 3 | 1 | 6 | 5 | 1 | 3 | 1 | 2 | 4 |
| 1 | 5 | 2 | 3 | 6 | 4 | 2 | 3 | 1 | 2 |
| 3 | 2 | 4 | 5 | 2 | 1 | 7 | 6 | 3 | 5 |

#3

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 2 | 5 | 1 | 7 | 4 | 6 | 3 | 5 |
| 2 | 6 | 3 | 1 | 4 | 2 | 1 | 5 | 2 | 6 |
| 4 | 3 | 1 | 2 | 6 | 1 | 3 | 7 | 5 | 4 |
| 1 | 2 | 5 | 4 | 2 | 3 | 6 | 2 | 1 | 3 |
| 5 | 1 | 6 | 3 | 1 | 2 | 5 | 4 | 3 | 2 |
| 3 | 4 | 2 | 1 | 5 | 1 | 4 | 3 | 6 | 1 |
| 2 | 3 | 1 | 5 | 2 | 6 | 1 | 2 | 4 | 5 |
| 4 | 1 | 3 | 2 | 1 | 4 | 3 | 5 | 1 | 2 |
| 6 | 2 | 1 | 4 | 3 | 5 | 2 | 6 | 3 | 4 |
| 3 | 5 | 4 | 1 | 2 | 3 | 1 | 4 | 5 | 6 |

#4

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 2 | 5 | 3 | 1 | 2 | 1 | 3 | 2 |
| 3 | 2 | 1 | 4 | 1 | 5 | 1 | 2 | 4 | 1 |
| 1 | 6 | 3 | 1 | 4 | 2 | 3 | 5 | 2 | 4 |
| 4 | 5 | 1 | 3 | 2 | 7 | 4 | 3 | 1 | 5 |
| 6 | 2 | 5 | 1 | 3 | 1 | 8 | 2 | 3 | 1 |
| 2 | 3 | 1 | 2 | 1 | 4 | 5 | 6 | 1 | 3 |
| 5 | 7 | 3 | 4 | 2 | 1 | 3 | 1 | 5 | 6 |
| 3 | 1 | 4 | 6 | 5 | 2 | 1 | 4 | 7 | 1 |
| 1 | 4 | 2 | 5 | 6 | 3 | 2 | 1 | 4 | 2 |
| 4 | 5 | 6 | 2 | 3 | 1 | 4 | 2 | 3 | 5 |

#5

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | 3 | 2 | 4 | 1 | 5 | 3 | 2 | 1 |
| 1 | 3 | 2 | 1 | 5 | 3 | 2 | 6 | 4 | 3 |
| 5 | 2 | 1 | 6 | 3 | 4 | 1 | 7 | 5 | 2 |
| 3 | 1 | 6 | 5 | 1 | 2 | 3 | 1 | 2 | 1 |
| 1 | 4 | 1 | 3 | 2 | 1 | 4 | 3 | 6 | 5 |
| 2 | 3 | 4 | 1 | 6 | 3 | 2 | 4 | 1 | 2 |
| 1 | 2 | 1 | 4 | 1 | 2 | 5 | 1 | 3 | 4 |
| 3 | 6 | 2 | 1 | 3 | 4 | 8 | 2 | 7 | 3 |
| 2 | 1 | 5 | 3 | 2 | 1 | 6 | 3 | 5 | 2 |
| 1 | 3 | 1 | 2 | 1 | 3 | 2 | 5 | 4 | 1 |

#6

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 4 | 3 | 5 | 7 | 2 | 4 | 3 | 6 | 5 |
| 5 | 1 | 6 | 2 | 4 | 1 | 3 | 1 | 2 | 1 |
| 7 | 5 | 1 | 6 | 3 | 4 | 2 | 5 | 1 | 3 |
| 2 | 3 | 4 | 7 | 2 | 5 | 6 | 2 | 3 | 4 |
| 3 | 6 | 5 | 2 | 1 | 3 | 7 | 4 | 5 | 1 |
| 1 | 4 | 2 | 1 | 5 | 7 | 2 | 6 | 1 | 2 |
| 4 | 2 | 3 | 5 | 6 | 2 | 4 | 1 | 2 | 3 |
| 6 | 1 | 7 | 1 | 4 | 1 | 3 | 2 | 1 | 6 |
| 5 | 3 | 6 | 4 | 7 | 3 | 5 | 1 | 4 | 2 |
| 3 | 5 | 4 | 2 | 1 | 6 | 2 | 5 | 3 | 1 |

#7

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 5 | 2 | 3 | 1 | 4 | 7 | 2 | 6 | 3 |
| 8 | 9 | 3 | 7 | 4 | 1 | 5 | 3 | 1 | 2 |
| 5 | 2 | 7 | 6 | 1 | 2 | 3 | 1 | 2 | 5 |
| 4 | 6 | 5 | 1 | 2 | 7 | 8 | 4 | 3 | 1 |
| 3 | 1 | 4 | 2 | 3 | 1 | 2 | 6 | 1 | 2 |
| 1 | 4 | 2 | 5 | 7 | 3 | 4 | 1 | 2 | 3 |
| 2 | 3 | 6 | 1 | 4 | 2 | 1 | 5 | 7 | 4 |
| 1 | 2 | 1 | 3 | 2 | 4 | 5 | 2 | 3 | 1 |
| 7 | 1 | 3 | 4 | 6 | 1 | 2 | 3 | 4 | 2 |
| 3 | 5 | 2 | 6 | 1 | 2 | 3 | 1 | 2 | 1 |

#8

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 1 | 6 | 2 | 7 | 4 | 3 | 1 | 2 | 1 |
| 5 | 3 | 1 | 6 | 2 | 1 | 4 | 5 | 3 | 2 |
| 3 | 5 | 4 | 7 | 3 | 2 | 1 | 4 | 6 | 1 |
| 2 | 1 | 3 | 5 | 4 | 7 | 6 | 1 | 2 | 3 |
| 6 | 4 | 5 | 9 | 2 | 3 | 7 | 6 | 5 | 4 |
| 1 | 2 | 8 | 3 | 5 | 2 | 1 | 3 | 4 | 2 |
| 4 | 3 | 7 | 2 | 1 | 4 | 5 | 2 | 3 | 1 |
| 5 | 1 | 3 | 4 | 6 | 1 | 3 | 7 | 1 | 5 |
| 3 | 2 | 1 | 6 | 2 | 5 | 1 | 4 | 7 | 3 |
| 7 | 5 | 4 | 2 | 1 | 3 | 2 | 5 | 6 | 4 |

#9

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 4 | 6 | 5 | 2 | 3 | 4 | 2 | 1 |
| 2 | 4 | 5 | 2 | 7 | 3 | 2 | 1 | 4 | 6 |
| 1 | 8 | 6 | 1 | 4 | 1 | 5 | 2 | 1 | 3 |
| 3 | 2 | 7 | 4 | 3 | 8 | 6 | 1 | 3 | 4 |
| 2 | 5 | 3 | 2 | 6 | 4 | 7 | 3 | 2 | 5 |
| 4 | 7 | 8 | 5 | 1 | 3 | 2 | 4 | 6 | 7 |
| 1 | 6 | 4 | 8 | 2 | 1 | 3 | 2 | 7 | 1 |
| 3 | 4 | 1 | 6 | 8 | 2 | 4 | 5 | 3 | 2 |
| 7 | 3 | 5 | 1 | 4 | 6 | 1 | 8 | 5 | 4 |
| 5 | 1 | 6 | 4 | 3 | 7 | 2 | 9 | 8 | 3 |

#10

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 3 | 7 | 1 | 2 | 4 | 5 | 3 | 2 | 1 |
| 3 | 5 | 2 | 6 | 1 | 3 | 1 | 2 | 1 | 3 |
| 5 | 2 | 1 | 4 | 3 | 1 | 2 | 5 | 4 | 2 |
| 2 | 1 | 3 | 2 | 4 | 5 | 3 | 6 | 2 | 4 |
| 1 | 3 | 4 | 5 | 1 | 2 | 1 | 4 | 3 | 1 |
| 3 | 2 | 5 | 1 | 2 | 3 | 4 | 2 | 1 | 5 |
| 4 | 1 | 2 | 3 | 1 | 4 | 5 | 3 | 2 | 1 |
| 1 | 4 | 3 | 2 | 5 | 6 | 3 | 1 | 4 | 2 |
| 5 | 2 | 1 | 4 | 3 | 1 | 2 | 5 | 3 | 1 |
| 2 | 3 | 4 | 1 | 2 | 3 | 1 | 4 | 5 | 3 |

#11

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 6 | 3 | 1 | 2 | 1 | 3 | 4 | 1 | 2 |
| 2 | 4 | 5 | 3 | 1 | 2 | 4 | 3 | 6 | 5 |
| 3 | 2 | 4 | 5 | 6 | 1 | 2 | 1 | 3 | 4 |
| 1 | 3 | 1 | 2 | 4 | 3 | 5 | 6 | 1 | 2 |
| 4 | 5 | 6 | 1 | 2 | 4 | 1 | 5 | 2 | 6 |
| 1 | 2 | 3 | 4 | 1 | 5 | 6 | 3 | 4 | 1 |
| 5 | 4 | 1 | 2 | 3 | 1 | 4 | 7 | 5 | 3 |
| 2 | 3 | 4 | 6 | 5 | 2 | 3 | 4 | 2 | 1 |
| 3 | 1 | 2 | 5 | 4 | 6 | 1 | 2 | 3 | 4 |
| 4 | 2 | 1 | 3 | 2 | 4 | 5 | 3 | 1 | 2 |

#12

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | 6 | 1 | 5 | 4 | 3 | 1 | 2 | 1 |
| 2 | 4 | 1 | 3 | 2 | 1 | 5 | 3 | 4 | 2 |
| 5 | 2 | 3 | 6 | 1 | 2 | 4 | 1 | 3 | 1 |
| 1 | 3 | 5 | 2 | 4 | 3 | 6 | 2 | 5 | 3 |
| 6 | 1 | 2 | 4 | 1 | 5 | 2 | 6 | 1 | 2 |
| 4 | 2 | 1 | 5 | 6 | 4 | 3 | 1 | 2 | 5 |
| 3 | 5 | 4 | 2 | 3 | 6 | 1 | 2 | 3 | 4 |
| 2 | 4 | 6 | 3 | 5 | 1 | 2 | 3 | 4 | 2 |
| 5 | 3 | 2 | 1 | 4 | 3 | 5 | 1 | 6 | 3 |
| 1 | 6 | 3 | 4 | 2 | 1 | 3 | 2 | 5 | 1 |