

# APS 1080 - Exercise 1

- Armando Ordorica
- Student ID: 1005592164
- Prof. Nebu Mathai
- Jan 2023

## 1. Anatomy

**Read the code and observe how the concepts of the course thus far relate to it. Comment on these correspondences.**

- The code defines a Tic-Tac-Toe game that can be played by two players. It defines a "State" class that represents the state of a game. In this case, the states are represented by possible configurations of the board, which are  $3^9 = 19,683$  possibilities.
- The code contains many boards in the `all_states` variable, which uses combinations of 0, 1, and -1. 1 is to represent '\*', which is the human player, and -1 to represent 'x', which is the computer's symbol.
- The `Judger` class initializes two players, `player1` and `player2` and assigns the signs to each other. P1's symbol is 1 ('\*') and P2's symbol is -1 ('x').

### What does an RL agent solve?

The RL agent would learn to play the game optimally by repeatedly playing the game and receiving rewards or penalties based on its performance. The agent would learn to make decisions that maximize its chances of winning the game by adjusting its strategy based on the rewards and penalties it receives.

The agent is solving a decision-making problem where it needs to choose an action to take in each state (or position) of the game so as to maximize its rewards. The goal of the agent is to win the game, or draw if it can't win, by choosing moves that result in the best outcomes based on the current state of the game. The agent interacts with the environment, in this case the tic-tac-toe game, by taking actions, observing the results of the actions and receiving rewards, and updating its policy based on the observed outcomes. The policy is a mapping from states to actions that the agent takes, and the objective is to learn a good policy through trial-and-error and reinforcement from rewards.

### What should a RL agent have inside of it? Do you observe these in the program?

The RL agent should have the following components:

1. **State Representation:** The agent needs to have a way of representing the current state of the game board. This could be done using a 2D array, where each element

represents the state of a particular cell on the board. This code has a `State` object, which contains a 3x3 numpy array that is stored in the `data` attribute. The variable `all_states` contains all the possible board configurations. As stated above, the `all_states` variables contains ~6k possible combinations of 1, -1, and 0 to represent the human player, the computer, and empty cells respectively.

2. **Action:** The actions in this game are the placement of a chessman (represented by 1 or -1) in a given position on the board.
3. **Reward:** The reward in this game is the end result, either a win, a loss, or a draw. A win is represented by a 1, a loss by -1, and a draw by 0.
4. **Policy:** The Player object contains a dictionary called `estimations`, which gets updated using a backup function. The code ends up saving these learned estimations as a policy in a `.bin` file. Note that estimations are not available for the `HumanPlayer` object and only for the AI player with the `Player` class.
5. **Model:** the model in this code is implicit in the state and the transition from one state to the next through the actions.

## 2. Instrumentation and Play

Modify the code so it trains against you interactively. Instrument the code to print the value function as it learns, and also when it takes an exploit vs explore action.

The `self.estimations` attribute in the `Player` object contains a dictionary with the policy values. They get initialized to 0.5 values but get updated as the AI trains itself.

For example, in one realization, this was a value before in the `estimations` dictionary for state 9841: `9841.0: 0.4999386591027`. However, the value of this state changed in the `estimations` dictionary after updating: `9841.0: 0.5000613408972999`.

The following code leverages exploration exploitation by using an  $\epsilon$  greedy approach, the `act()` function selects the next positions at random. However, the *risk tolerance* or willing to choose a next position at random will only take place if a random number is below  $\epsilon$ . In this case, if  $\epsilon$  is set to 0.01, that means that less than a random position will be selected less than 1% of the time.

```
def act(self):
    state = self.states[-1]
    next_states = []
    next_positions = []
    for i in range(BOARD_ROWS):
        for j in range(BOARD_COLS):
            if state.data[i, j] == 0:
                next_positions.append([i, j])
                next_states.append(state.next_state(
                    i, j, self.symbol).hash())

    if np.random.rand() < self.epsilon:
        action =
```

```

next_positions[np.random.randint(len(next_positions))]
    action.append(self.symbol)
    self.greedy[-1] = False
    return action

```

Let the agent train against you for N games. Comment on how the agent's competence increases as N increases.

- As the number of epochs increases, the win rate for both players decreases. This could be because it is possible to force Tic-Tac-Toe to a draw in the worst case scenario.
- If you decrease the number of times it trains against itself, it becomes significantly dumber. I changed it to only train itself 10 times and winning against it was trivial.

```

In [1]: #####
# Copyright (C)
# 2016 - 2018 Shangtong Zhang(zhangshangtong.cpp@gmail.com)
# 2016 Jan Hakenberg(jan.hakenberg@gmail.com)
# 2016 Tian Jun(tianjun.cpp@gmail.com)
# 2016 Kenta Shimada(hyperkentakun@gmail.com)
# Permission given to modify the code as long as you keep this
# declaration at the top
#####

import numpy as np
import pickle

BOARD_ROWS = 3
BOARD_COLS = 3
BOARD_SIZE = BOARD_ROWS * BOARD_COLS

class State:
    def __init__(self):
        # the board is represented by an n * n array,
        # 1 represents a chessman of the player who moves first,
        # -1 represents a chessman of another player
        # 0 represents an empty position
        self.data = np.zeros((BOARD_ROWS, BOARD_COLS))
        self.winner = None
        self.hash_val = None
        self.end = None

    # compute the hash value for one state, it's unique
    def hash(self):
        if self.hash_val is None:
            self.hash_val = 0
            for i in np.nditer(self.data):
                self.hash_val = self.hash_val * 3 + i + 1
            return self.hash_val

    # check whether a player has won the game, or it's a tie
    def is_end(self):
        if self.end is not None:
            return self.end
        results = []
        # check row
        for i in range(BOARD_ROWS):

```

```

        results.append(np.sum(self.data[i, :]))
    # check columns
    for i in range(BOARD_COLS):
        results.append(np.sum(self.data[:, i]))

    # check diagonals
    trace = 0
    reverse_trace = 0
    for i in range(BOARD_ROWS):
        trace += self.data[i, i]
        reverse_trace += self.data[i, BOARD_ROWS - 1 - i]
    results.append(trace)
    results.append(reverse_trace)

    for result in results:
        if result == 3:
            self.winner = 1
            self.end = True
            return self.end
        if result == -3:
            self.winner = -1
            self.end = True
            return self.end

    # whether it's a tie
    sum_values = np.sum(np.abs(self.data))
    if sum_values == BOARD_SIZE:
        self.winner = 0
        self.end = True
        return self.end

    # game is still going on
    self.end = False
    return self.end

# @symbol: 1 or -1
# put chessman symbol in position (i, j)
def next_state(self, i, j, symbol):
    new_state = State()
    new_state.data = np.copy(self.data)
    new_state.data[i, j] = symbol
    return new_state

# print the board
def print_state(self):
    for i in range(BOARD_ROWS):
        print('-----')
        out = '| '
        for j in range(BOARD_COLS):
            if self.data[i, j] == 1:
                token = '*'
            elif self.data[i, j] == -1:
                token = 'x'
            else:
                token = '0'
            out += token + ' | '
        print(out)
    print('-----')

```

```

def get_all_states_impl(current_state, current_symbol, all_states):
    for i in range(BOARD_ROWS):
        for j in range(BOARD_COLS):
            if current_state.data[i][j] == 0:
                new_state = current_state.next_state(i, j, current_symbol)
                new_hash = new_state.hash()
                if new_hash not in all_states:
                    is_end = new_state.is_end()
                    all_states[new_hash] = (new_state, is_end)
                    if not is_end:
                        get_all_states_impl(new_state, -current_symbol, all_states)

def get_all_states():
    current_symbol = 1
    current_state = State()
    all_states = dict()
    all_states[current_state.hash()] = (current_state, current_state.is_end())
    get_all_states_impl(current_state, current_symbol, all_states)
    return all_states

# all possible board configurations
all_states = get_all_states()

class Judger:
    # @player1: the player who will move first, its chessman will be 1
    # @player2: another player with a chessman -1
    def __init__(self, player1, player2):
        self.p1 = player1
        self.p2 = player2
        self.current_player = None
        self.p1_symbol = 1
        self.p2_symbol = -1
        self.p1.set_symbol(self.p1_symbol)
        self.p2.set_symbol(self.p2_symbol)
        self.current_state = State()

    def reset(self):
        self.p1.reset()
        self.p2.reset()

    def alternate(self):
        while True:
            yield self.p1
            yield self.p2

    # @print_state: if True, print each board during the game
    def play(self, print_state=False):
        alternator = self.alternate()
        self.reset()
        current_state = State()
        self.p1.set_state(current_state)
        self.p2.set_state(current_state)
        if print_state:
            current_state.print_state()
        while True:
            player = next(alternator)
            i, j, symbol = player.act()

```

```

        next_state_hash = current_state.next_state(i, j, symbol).hash()
        current_state, is_end = all_states[next_state_hash]
        self.p1.set_state(current_state)
        self.p2.set_state(current_state)
        if print_state:
            current_state.print_state()
        if is_end:
            return current_state.winner

# AI player
class Player:
    # @step_size: the step size to update estimations
    # @epsilon: the probability to explore
    def __init__(self, step_size=0.1, epsilon=0.1):
        self.estimations = dict()
        self.step_size = step_size
        self.epsilon = epsilon
        self.states = []
        self.greedy = []
        self.symbol = 0

    def reset(self):
        self.states = []
        self.greedy = []

    def set_state(self, state):
        self.states.append(state)
        self.greedy.append(True)

    def set_symbol(self, symbol):
        self.symbol = symbol
        for hash_val in all_states:
            state, is_end = all_states[hash_val]
            if is_end:
                if state.winner == self.symbol:
                    self.estimations[hash_val] = 1.0
                elif state.winner == 0:
                    # we need to distinguish between a tie and a lose
                    self.estimations[hash_val] = 0.5
                else:
                    self.estimations[hash_val] = 0
            else:
                self.estimations[hash_val] = 0.5

# update value estimation
def backup(self):
    states = [state.hash() for state in self.states]

    print("Printing Estimations from Value Function BEFORE Updating...")
    print(self.estimations)

    print("Printing Greedy from backup function BEFORE Updating...")
    print(self.greedy)

    for i in reversed(range(len(states) - 1)):
        state = states[i]
        td_error = self.greedy[i] * (
            self.estimations[states[i + 1]] - self.estimations[state]
        )

```

```

        self.estimatedions[state] += self.step_size * td_error
    print("Printing Estimations from Value Function AFTER Updating...")
    print(self.estimatedions)

    print("Printing Greedy from backup function BEFORE Updating...")
    print(self.greedy)

# choose an action based on the state
    def act(self):
        state = self.states[-1]
        next_states = []
        next_positions = []
        for i in range(BOARD_ROWS):
            for j in range(BOARD_COLS):
                if state.data[i, j] == 0:
                    next_positions.append([i, j])
                    next_states.append(state.next_state(
                        i, j, self.symbol).hash())

        if np.random.rand() < self.epsilon:
            action = next_positions[np.random.randint(len(next_positions))]
            action.append(self.symbol)
            self.greedy[-1] = False
            return action

        values = []
        for hash_val, pos in zip(next_states, next_positions):
            values.append((self.estimatedions[hash_val], pos))
        # to select one of the actions of equal value at random due to Python's
        np.random.shuffle(values)
        values.sort(key=lambda x: x[0], reverse=True)
        action = values[0][1]
        action.append(self.symbol)
        return action

    def save_policy(self):
        with open('policy_%s.bin' % ('first' if self.symbol == 1 else 'second')):
            pickle.dump(self.estimatedions, f)

    def load_policy(self):
        with open('policy_%s.bin' % ('first' if self.symbol == 1 else 'second')):
            self.estimatedions = pickle.load(f)
            print("self.estimatedions from load_policy() function")
            print(self.estimatedions)

# human interface
# input a number to put a chessman
# | q | w | e |
# | a | s | d |
# | z | x | c |
    class HumanPlayer:
        def __init__(self, **kwargs):
            self.symbol = None
            self.keys = ['q', 'w', 'e', 'a', 's', 'd', 'z', 'x', 'c']
            self.state = None

        def reset(self):
            pass

```

```

def set_state(self, state):
    self.state = state

def set_symbol(self, symbol):
    self.symbol = symbol

def act(self):
    self.state.print_state()
    key = input("Input your position:")
    data = self.keys.index(key)
    i = data // BOARD_COLS
    j = data % BOARD_COLS
    return i, j, self.symbol

def train(epochs, print_every_n=500):
    player1 = Player(epsilon=0.01)
    player2 = Player(epsilon=0.01)
    judger = Judger(player1, player2)
    player1_win = 0.0
    player2_win = 0.0
    for i in range(1, epochs + 1):
        winner = judger.play(print_state=False)
        if winner == 1:
            player1_win += 1
        if winner == -1:
            player2_win += 1
        if i % print_every_n == 0:
            print('Epoch %d, player 1 winrate: %.02f, player 2 winrate: %.02f'
                  % (i, player1_win / i, player2_win / i))
            player1.backup()
            player2.backup()
            judger.reset()
    player1.save_policy()
    player2.save_policy()

def compete(turns):
    player1 = Player(epsilon=0)
    player2 = Player(epsilon=0)
    judger = Judger(player1, player2)
    player1.load_policy()
    player2.load_policy()
    player1_win = 0.0
    player2_win = 0.0
    for _ in range(turns):
        winner = judger.play()
        if winner == 1:
            player1_win += 1
        if winner == -1:
            player2_win += 1
        judger.reset()
    print('%d turns, player 1 win %.02f, player 2 win %.02f' % (turns, player1_win / turns, player2_win / turns))

# The game is a zero sum game. If both players are playing with an optimal strategy
# So we test whether the AI can guarantee at least a tie if it goes second.
def play():
    while True:
        player1 = HumanPlayer()
        player2 = Player(epsilon=0)

```



```
    judger = Judger(player1, player2)
    player2.load_policy()
    winner = judger.play()
    if winner == player2.symbol:
        print("You lose!")
    elif winner == player1.symbol:
        print("You win!")
    else:
        print("It is a tie!")

# train(int(1e5))
# train(10)
# compete(int(1e3))
# play()
```

In [2]: `# compete(int(3))`

In [3]: `play()`

```
self.estimateds from load_policy() function
{9841.0: 0.4999514633194276, 16402.0: 0.5, 14215.0: 0.5, 14944.0: 0.5, 14701.
0: 0.5, 14782.0: 0.5, 14755.0: 0.5, 14764.0: 0, 14758.0: 0.5, 14749.0: 0.5, 14
750.0: 0, 14757.0: 0.5, 14766.0: 0, 14756.0: 0, 14773.0: 0.5, 14800.0: 0.5, 14
797.0: 0.5, 14798.0: 0, 14799.0: 0.5, 14802.0: 0.5, 14776.0: 0.5, 14775.0: 0.
5, 14774.0: 0, 14779.0: 0.5, 14806.0: 0.5, 14805.0: 0.5, 14814.0: 0, 14788.0:
0, 14780.0: 0, 14781.0: 0.5, 14808.0: 0.5, 14790.0: 0, 14784.0: 0.5, 14728.0:
0.5, 14647.0: 0.5, 14656.0: 0.5, 14653.0: 1.0, 14655.0: 0.5, 14658.0: 0.5, 146
50.0: 0.5, 14641.0: 0.5, 14642.0: 0, 14649.0: 0.5, 14648.0: 0, 14719.0: 0.5, 1
4722.0: 0.5, 14721.0: 0.5, 14720.0: 0, 14725.0: 0.5, 14734.0: 0.5, 14733.0: 0.
5, 14726.0: 0, 14727.0: 0.5, 14736.0: 0.5, 14730.0: 0.5, 14710.0: 0.5, 14629.
0: 0.5, 14632.0: 0.5, 14605.0: 1.0, 14631.0: 0.5, 14630.0: 0.5, 14603.0: 1.0,
14627.0: 1.0, 14683.0: 0.5, 14686.0: 0.5, 14685.0: 0.5, 14684.0: 0.5, 14681.0:
0.5, 14762.0: 0, 14707.0: 0.5, 14708.0: 0.5, 14709.0: 0.5, 14712.0: 0.5, 1470
4.0: 0.5, 14623.0: 0.5, 14624.0: 0.5, 14597.0: 1.0, 14615.0: 0.5, 14677.0: 0.
5, 14678.0: 0.5, 14669.0: 0.5, 14695.0: 0.5, 14696.0: 0.5, 14703.0: 0.5, 1470
2.0: 0.5, 14621.0: 0.5, 14675.0: 0.5, 14693.0: 0.5, 14699.0: 0.5, 14863.0: 0.
5, 15106.0: 0.5, 15079.0: 0.5, 15088.0: 0, 15082.0: 0.5, 15073.0: 0.5, 15074.
0: 0.5, 15081.0: 0.5, 15090.0: 0, 15080.0: 0.5, 15071.0: 0.5, 15077.0: 1.0, 15
097.0: 0.5, 15124.0: 0.5, 15121.0: 1.0, 15123.0: 0.5, 15126.0: 0.5, 15100.0:
0.5, 15099.0: 0.5, 15098.0: 0.5, 15095.0: 1.0, 15103.0: 1.0, 15105.0: 0.5, 151
32.0: 0.5, 15129.0: 1.0, 15114.0: 0, 15108.0: 0.5, 14890.0: 0.5, 14881.0: 0.5,
14884.0: 0.5, 14883.0: 0.5, 14882.0: 0, 14887.0: 1.0, 14889.0: 0.5, 14898.0:
0.5, 14895.0: 1.0, 14892.0: 0.5, 14872.0: 0.5, 14845.0: 0.5, 14848.0: 0.5, 148
47.0: 0.5, 14846.0: 0.5, 14843.0: 1.0, 14869.0: 1.0, 14871.0: 0.5, 14874.0: 0.
5, 14866.0: 0.5, 14839.0: 0.5, 14840.0: 0.5, 14831.0: 0.5, 14857.0: 0.5, 1485
8.0: 0.5, 14865.0: 0.5, 14864.0: 0.5, 14837.0: 0.5, 14855.0: 0.5, 14861.0: 1.
0, 14917.0: 0.5, 15160.0: 0.5, 15151.0: 0.5, 15232.0: 0.5, 15229.0: 0.5, 1523
0.0: 0, 15231.0: 0.5, 15234.0: 0.5, 15154.0: 0.5, 15153.0: 0.5, 15152.0: 0.5,
15149.0: 0.5, 15157.0: 0.5, 15238.0: 0.5, 15237.0: 0.5, 15246.0: 0, 15166.0:
0, 15158.0: 0.5, 15159.0: 0.5, 15240.0: 0.5, 15168.0: 0, 15162.0: 0.5, 14998.
0: 0.5, 14989.0: 0.5, 14992.0: 0.5, 14991.0: 0.5, 14990.0: 0, 14995.0: 0.5, 15
004.0: 0, 14996.0: 0, 14997.0: 0.5, 15006.0: 0, 15000.0: 0.5, 14926.0: 0.5, 14
923.0: 0.5, 14924.0: 0.5, 14925.0: 0.5, 14928.0: 0.5, 14920.0: 0.5, 14911.0:
0.5, 14912.0: 0.5, 14919.0: 0.5, 14918.0: 0.5, 14909.0: 0.5, 14915.0: 0.5, 149
35.0: 0.5, 15178.0: 0.5, 15175.0: 0.5, 15256.0: 0.5, 15255.0: 1.0, 15202.0: 0.
5, 15201.0: 1.0, 15176.0: 0.5, 15177.0: 0.5, 15258.0: 0.5, 15204.0: 0.5, 1518
0.0: 0.5, 15016.0: 0.5, 15013.0: 0.5, 15040.0: 0.5, 15039.0: 1.0, 15014.0: 0,
15015.0: 0.5, 15042.0: 0.5, 15018.0: 0.5, 14962.0: 0.5, 14959.0: 0.5, 14960.0:
0, 14961.0: 0.5, 14964.0: 0.5, 14938.0: 0.5, 14937.0: 0.5, 14936.0: 0.5, 1493
3.0: 0.5, 14941.0: 0.5, 15184.0: 0.5, 15183.0: 0.5, 15264.0: 0.5, 15210.0: 0.
5, 15192.0: 0, 15022.0: 0.5, 15021.0: 0.5, 15048.0: 0.5, 15030.0: 0, 14968.0:
0.5, 14967.0: 0.5, 14976.0: 0.5, 14950.0: 0.5, 14949.0: 0.5, 14942.0: 0.5, 149
43.0: 0.5, 15186.0: 0.5, 15024.0: 0.5, 14970.0: 0.5, 14952.0: 0.5, 14946.0: 0.
5, 14458.0: 0.5, 13729.0: 0.5, 13810.0: 0.5, 13783.0: 0.5, 13792.0: 0, 13786.
0: 0.5, 13777.0: 0.5, 13778.0: 0, 13785.0: 1.0, 13784.0: 0, 13801.0: 0.5, 1382
8.0: 0, 13804.0: 0.5, 13803.0: 0.5, 13830.0: 0, 13802.0: 0, 13807.0: 0.5, 1383
4.0: 0, 13816.0: 0, 13808.0: 0, 13809.0: 0.5, 13836.0: 0, 13818.0: 0, 13812.0:
0.5, 13756.0: 0.5, 13675.0: 0.5, 13684.0: 0, 13678.0: 0.5, 13669.0: 1.0, 1367
7.0: 0.5, 13686.0: 0, 13676.0: 0.5, 13667.0: 1.0, 13673.0: 1.0, 13747.0: 0.5,
13750.0: 0.5, 13749.0: 0.5, 13748.0: 0.5, 13745.0: 0.5, 13826.0: 0, 13753.0:
0.5, 13762.0: 0, 13754.0: 0.5, 13755.0: 0.5, 13764.0: 0, 13758.0: 0.5, 13738.
0: 0, 13732.0: 0.5, 13651.0: 0.5, 13660.0: 0, 13652.0: 0.5, 13625.0: 0.5, 1363
4.0: 0, 13643.0: 1.0, 13705.0: 0.5, 13714.0: 0, 13706.0: 0.5, 13697.0: 0.5, 13
723.0: 0.5, 13724.0: 0.5, 13731.0: 0.5, 13740.0: 0, 13730.0: 0.5, 13649.0: 0.
5, 13658.0: 0, 13703.0: 0.5, 13712.0: 0, 13721.0: 0.5, 13727.0: 0.5, 13736.0:
0, 14377.0: 0.5, 14404.0: 0.5, 14395.0: 0.5, 14398.0: 0.5, 14397.0: 0.5, 1439
6.0: 0.5, 14393.0: 1.0, 14401.0: 1.0, 14403.0: 0.5, 14412.0: 0, 14406.0: 0.5,
14386.0: 0, 14380.0: 0.5, 14353.0: 0.5, 14362.0: 0, 14354.0: 0.5, 14345.0: 0.
5, 14371.0: 0.5, 14372.0: 0.5, 14379.0: 0.5, 14388.0: 0, 14378.0: 0.5, 14351.
```

0: 0.5, 14360.0: 0, 14369.0: 0.5, 14375.0: 1.0, 14431.0: 0.5, 14512.0: 0.5, 14503.0: 0.5, 14506.0: 0.5, 14505.0: 0.5, 14504.0: 0, 14509.0: 0.5, 14518.0: 0, 14510.0: 0, 14511.0: 0.5, 14520.0: 0, 14514.0: 0.5, 14440.0: 0, 14434.0: 0.5, 14425.0: 0.5, 14426.0: 0.5, 14433.0: 0.5, 14442.0: 0, 14432.0: 0.5, 14423.0: 0.5, 14429.0: 0.5, 14438.0: 0, 14449.0: 0.5, 14530.0: 0.5, 14527.0: 0.5, 14554.0: 0, 14528.0: 0, 14529.0: 0.5, 14556.0: 0, 14532.0: 0.5, 14476.0: 0.5, 14473.0: 0.5, 14474.0: 0.5, 14475.0: 0.5, 14478.0: 0.5, 14452.0: 0.5, 14451.0: 0.5, 14450.0: 0.5, 14447.0: 0.5, 14455.0: 0.5, 14536.0: 0.5, 14535.0: 0.5, 14562.0: 0, 14544.0: 0, 14482.0: 0.5, 14481.0: 0.5, 14490.0: 0, 14464.0: 0, 14456.0: 0.5, 14457.0: 0.5, 14538.0: 0.5, 14484.0: 0.5, 14466.0: 0, 14460.0: 0.5, 14296.0: 0.5, 13567.0: 0.5, 13594.0: 0.5, 13351.0: 0.5, 13360.0: 0.5, 13357.0: 0.5, 13358.0: 0, 13359.0: 0.5, 13362.0: 0.5, 13354.0: 0.5, 13345.0: 0.5, 13346.0: 0, 13353.0: 0.5, 13352.0: 0, 13585.0: 0.5, 13588.0: 0.5, 13587.0: 0.5, 13586.0: 0, 13591.0: 0.5, 13600.0: 0.5, 13599.0: 0.5, 13842.0: 0, 13592.0: 0, 13593.0: 0.5, 13602.0: 0.5, 13596.0: 0.5, 13576.0: 0.5, 13333.0: 0.5, 13336.0: 0.5, 13309.0: 0.5, 13310.0: 0, 13335.0: 0.5, 13334.0: 0, 13549.0: 0.5, 13552.0: 0.5, 13551.0: 1.0, 13550.0: 0, 13573.0: 0.5, 13574.0: 0, 13575.0: 0.5, 13578.0: 0.5, 13570.0: 0.5, 13327.0: 0.5, 13328.0: 0, 13543.0: 0.5, 13544.0: 0, 13561.0: 0.5, 13562.0: 0, 13569.0: 0.5, 13568.0: 0, 14053.0: 0.5, 14080.0: 0.5, 14071.0: 0.5, 14074.0: 0.5, 14073.0: 0.5, 14072.0: 0, 14077.0: 0.5, 14086.0: 0.5, 14085.0: 0.5, 14078.0: 0, 14079.0: 0.5, 14088.0: 0.5, 14082.0: 0.5, 14062.0: 0.5, 14035.0: 0.5, 14038.0: 0.5, 14037.0: 0.5, 14036.0: 0, 14059.0: 0.5, 14060.0: 0, 14061.0: 0.5, 14064.0: 0.5, 14056.0: 0.5, 14029.0: 0.5, 14030.0: 0, 14047.0: 0.5, 14048.0: 0, 14055.0: 0.5, 14054.0: 0, 14269.0: 0.5, 14278.0: 0.5, 14275.0: 0.5, 14276.0: 0, 14277.0: 0.5, 14280.0: 0.5, 14272.0: 0.5, 14263.0: 0.5, 14264.0: 0, 14271.0: 0.5, 14270.0: 0, 14287.0: 0.5, 14314.0: 0.5, 14311.0: 0.5, 14312.0: 0, 14313.0: 0.5, 14316.0: 0.5, 14290.0: 0.5, 14289.0: 0.5, 14288.0: 0, 14293.0: 0.5, 14320.0: 0.5, 14319.0: 0.5, 14328.0: 0.5, 14302.0: 0.5, 14301.0: 0.5, 14294.0: 0, 14295.0: 0.5, 14322.0: 0.5, 14304.0: 0.5, 14298.0: 0.5, 14242.0: 0.5, 13513.0: 0.5, 13522.0: 0.5, 13279.0: 0.5, 13282.0: 0.5, 13201.0: 0.5, 13202.0: 0, 13281.0: 0.5, 13280.0: 0.5, 13199.0: 0.5, 13277.0: 0.5, 13441.0: 0.5, 13444.0: 0.5, 13443.0: 0.5, 13442.0: 0.5, 13439.0: 1.0, 13519.0: 0.5, 13520.0: 0.5, 13521.0: 0.5, 13524.0: 0.5, 13516.0: 0.5, 13273.0: 0.5, 13274.0: 0.5, 13193.0: 0.5, 13265.0: 0.5, 13435.0: 0.5, 13436.0: 0.5, 13427.0: 1.0, 13507.0: 0.5, 13508.0: 0.5, 13515.0: 0.5, 13514.0: 0.5, 13271.0: 0.5, 13433.0: 0.5, 13505.0: 0.5, 13511.0: 0.5, 13999.0: 0.5, 14008.0: 0.5, 13927.0: 0.5, 13930.0: 0.5, 13929.0: 0.5, 13928.0: 0.5, 13925.0: 1.0, 14005.0: 0.5, 14006.0: 0.5, 14007.0: 0.5, 14010.0: 0.5, 14002.0: 0.5, 13921.0: 0.5, 13922.0: 0.5, 13913.0: 0.5, 13993.0: 0.5, 13994.0: 0.5, 14001.0: 0.5, 14000.0: 0.5, 13919.0: 0.5, 13991.0: 0.5, 13997.0: 0.5, 14161.0: 0.5, 14170.0: 0.5, 14167.0: 1.0, 14169.0: 0.5, 14172.0: 0.5, 14164.0: 0.5, 14155.0: 0.5, 14156.0: 0.5, 14163.0: 0.5, 14162.0: 0.5, 14153.0: 0.5, 14159.0: 1.0, 14233.0: 0.5, 14236.0: 0.5, 14235.0: 0.5, 14234.0: 0.5, 14231.0: 0.5, 14239.0: 0.5, 14248.0: 0.5, 14247.0: 0.5, 14240.0: 0.5, 14241.0: 0.5, 14250.0: 0.5, 14244.0: 0.5, 14224.0: 0.5, 13495.0: 0.5, 13498.0: 0.5, 13255.0: 0.5, 13256.0: 0, 13417.0: 0.5, 13418.0: 0, 13471.0: 0.5, 13472.0: 0, 13497.0: 0.5, 13496.0: 0.5, 13253.0: 0.5, 13415.0: 0.5, 13469.0: 0.5, 13493.0: 0.5, 13981.0: 0.5, 13984.0: 0.5, 13903.0: 0.5, 13904.0: 0, 13957.0: 0.5, 13958.0: 0, 13983.0: 0.5, 13982.0: 0.5, 13901.0: 0.5, 13955.0: 0.5, 13979.0: 0.5, 14143.0: 0.5, 14146.0: 0.5, 14119.0: 0.5, 14120.0: 0, 14145.0: 0.5, 14144.0: 0.5, 14117.0: 0.5, 14141.0: 1.0, 14197.0: 0.5, 14200.0: 0.5, 14199.0: 0.5, 14198.0: 0.5, 14195.0: 0.5, 14221.0: 0.5, 14222.0: 0.5, 14223.0: 0.5, 14226.0: 0.5, 14218.0: 0.5, 13489.0: 0.5, 13490.0: 0.5, 13247.0: 0.5, 13409.0: 0.5, 13463.0: 0.5, 13481.0: 0.5, 13975.0: 0.5, 13976.0: 0.5, 13895.0: 0.5, 13949.0: 0.5, 13967.0: 0.5, 14137.0: 0.5, 14138.0: 0.5, 14111.0: 0.5, 14129.0: 0.5, 14191.0: 0.5, 14192.0: 0.5, 14183.0: 0.5, 14209.0: 0.5, 14210.0: 0.5, 14217.0: 0.5, 14216.0: 0.5, 13487.0: 0.5, 13973.0: 0.5, 14135.0: 0.5, 14189.0: 0.5, 14207.0: 0.5, 14213.0: 0.5, 15673.0: 0.5, 17860.0: 0.5, 17617.0: 0.5, 17698.0: 0.5, 17671.0: 0.5, 17680.0: 0.5, 17677.0: 0.5, 17678.0: 0, 17679.0: 1.0, 17674.0: 0, 17672.0: 0, 17689.0: 0.5, 17716.0: 0.5, 17713.0: 0.5, 17714.0: 0, 17715.0: 0.5, 17718.0: 0, 17692.0: 0, 1769

0.0: 0, 17695.0: 0.5, 17722.0: 0.5, 17721.0: 0.5, 17730.0: 0.5, 17704.0: 0.5, 17703.0: 0.5, 17696.0: 0, 17697.0: 0.5, 17724.0: 0.5, 17706.0: 0.5, 17700.0: 0, 17644.0: 0.5, 17563.0: 0.5, 17572.0: 0.5, 17569.0: 0.5, 17570.0: 0.5, 17571.0: 0.5, 17574.0: 0.5, 17566.0: 0.5, 17557.0: 1.0, 17565.0: 0.5, 17564.0: 0.5, 17555.0: 1.0, 17561.0: 0.5, 17635.0: 0.5, 17638.0: 0.5, 17637.0: 0.5, 17636.0: 0.5, 17633.0: 0.5, 17641.0: 0.5, 17650.0: 0.5, 17649.0: 0.5, 17642.0: 0.5, 17643.0: 0.5, 17652.0: 0.5, 17646.0: 0.5, 17626.0: 0.5, 17545.0: 0.5, 17548.0: 0.5, 17521.0: 1.0, 17547.0: 0.5, 17546.0: 0.5, 17519.0: 1.0, 17543.0: 0.5, 17599.0: 0.5, 17602.0: 0.5, 17601.0: 1.0, 17600.0: 0.5, 17597.0: 0.5, 17623.0: 0.5, 17624.0: 0.5, 17625.0: 0.5, 17628.0: 0.5, 17620.0: 0.5, 17539.0: 0.5, 17540.0: 0.5, 17513.0: 1.0, 17531.0: 1.0, 17593.0: 0.5, 17594.0: 0.5, 17585.0: 0.5, 17666.0: 0, 17611.0: 0.5, 17612.0: 0.5, 17619.0: 0.5, 17618.0: 0.5, 17537.0: 0.5, 17591.0: 0.5, 17609.0: 0.5, 17615.0: 0.5, 17779.0: 0.5, 18022.0: 0.5, 17995.0: 0.5, 18004.0: 0, 17998.0: 0.5, 17989.0: 1.0, 17997.0: 1.0, 17996.0: 0.5, 17987.0: 1.0, 17993.0: 0.5, 18002.0: 0, 18013.0: 1.0, 18019.0: 0.5, 18046.0: 0.5, 18037.0: 1.0, 18045.0: 0.5, 18054.0: 0, 18028.0: 0, 18020.0: 0.5, 18011.0: 1.0, 18021.0: 0.5, 18048.0: 0.5, 18039.0: 1.0, 18030.0: 0, 18024.0: 0.5, 18015.0: 1.0, 17806.0: 0.5, 17797.0: 1.0, 17803.0: 0.5, 17812.0: 0.5, 17811.0: 0.5, 17804.0: 0.5, 17795.0: 1.0, 17805.0: 0.5, 17814.0: 0.5, 17808.0: 0.5, 17799.0: 1.0, 17788.0: 0.5, 17761.0: 0.5, 17764.0: 0.5, 17763.0: 1.0, 17762.0: 0.5, 17759.0: 0.5, 17785.0: 0.5, 17786.0: 0.5, 17787.0: 0.5, 17790.0: 0.5, 17782.0: 0.5, 17755.0: 0.5, 17756.0: 0.5, 17747.0: 1.0, 17773.0: 1.0, 17781.0: 0.5, 17780.0: 0.5, 17753.0: 0.5, 17771.0: 1.0, 17777.0: 0.5, 17833.0: 0.5, 18076.0: 0.5, 18067.0: 0.5, 18148.0: 0.5, 18145.0: 0.5, 18146.0: 0, 18147.0: 1.0, 18070.0: 0.5, 18069.0: 1.0, 18068.0: 0.5, 18065.0: 0.5, 18073.0: 0.5, 18154.0: 0.5, 18153.0: 1.0, 18082.0: 0, 18074.0: 0.5, 18075.0: 1.0, 17914.0: 0.5, 17905.0: 0.5, 17908.0: 0, 17906.0: 0, 17911.0: 0.5, 17920.0: 0.5, 17919.0: 1.0, 17912.0: 0, 17913.0: 1.0, 17842.0: 0.5, 17839.0: 0.5, 17840.0: 0.5, 17841.0: 1.0, 17836.0: 0.5, 17827.0: 0.5, 17828.0: 0.5, 17835.0: 1.0, 17834.0: 0.5, 17825.0: 0.5, 17831.0: 0.5, 17851.0: 0.5, 18094.0: 0.5, 18091.0: 0.5, 18172.0: 0.5, 18171.0: 1.0, 18118.0: 0.5, 18117.0: 1.0, 18092.0: 0.5, 18093.0: 0.5, 18174.0: 0.5, 18120.0: 0.5, 18096.0: 0.5, 17932.0: 0.5, 17929.0: 0.5, 17956.0: 0.5, 17955.0: 1.0, 17930.0: 0, 17931.0: 0.5, 17958.0: 0.5, 17934.0: 0, 17878.0: 0.5, 17875.0: 0.5, 17876.0: 0.5, 17877.0: 0.5, 17880.0: 0.5, 17854.0: 0.5, 17853.0: 0.5, 17852.0: 0.5, 17849.0: 0.5, 17857.0: 0.5, 18100.0: 0.5, 18099.0: 0.5, 18180.0: 0.5, 18126.0: 0.5, 18108.0: 0, 17938.0: 0.5, 17937.0: 0.5, 17964.0: 0.5, 17946.0: 0.5, 17884.0: 0.5, 17883.0: 0.5, 17892.0: 0.5, 17866.0: 0.5, 17865.0: 0.5, 17858.0: 0.5, 17859.0: 0.5, 18102.0: 0.5, 17940.0: 0.5, 17886.0: 0.5, 17868.0: 0.5, 17862.0: 0.5, 15916.0: 0.5, 15835.0: 0.5, 15862.0: 0.5, 15853.0: 1.0, 15859.0: 0.5, 15868.0: 0, 15860.0: 0.5, 15851.0: 1.0, 15861.0: 0.5, 15870.0: 0, 15864.0: 0.5, 15855.0: 1.0, 15844.0: 0, 15838.0: 0.5, 15811.0: 0.5, 15820.0: 0, 15812.0: 0.5, 15803.0: 1.0, 15829.0: 1.0, 15837.0: 0.5, 15846.0: 0, 15836.0: 0.5, 15809.0: 0.5, 15818.0: 0, 15827.0: 1.0, 15833.0: 0.5, 15842.0: 0, 15889.0: 0.5, 15970.0: 0.5, 15961.0: 0.5, 15964.0: 0.5, 15963.0: 1.0, 15962.0: 0, 15967.0: 0.5, 15976.0: 0, 15968.0: 0, 15969.0: 1.0, 15898.0: 0, 15892.0: 0.5, 15883.0: 0.5, 15884.0: 0.5, 15891.0: 1.0, 15890.0: 0.5, 15881.0: 0.5, 15887.0: 0.5, 15896.0: 0, 15907.0: 0.5, 15988.0: 0.5, 15985.0: 0.5, 16012.0: 0, 15986.0: 0, 15987.0: 0.5, 16014.0: 0, 15990.0: 0.5, 15934.0: 0.5, 15931.0: 0.5, 15932.0: 0.5, 15933.0: 0.5, 15936.0: 0.5, 15910.0: 0.5, 15909.0: 0.5, 15908.0: 0.5, 15905.0: 0.5, 15913.0: 0.5, 15994.0: 0.5, 15993.0: 0.5, 16020.0: 0, 16002.0: 0, 15940.0: 0.5, 15939.0: 0.5, 15948.0: 0, 15922.0: 0, 15914.0: 0.5, 15915.0: 0.5, 15996.0: 0.5, 15942.0: 0.5, 15924.0: 0, 15918.0: 0.5, 15754.0: 0.5, 15511.0: 0.5, 15538.0: 0.5, 15529.0: 0.5, 15532.0: 0.5, 15531.0: 0.5, 15530.0: 0, 15535.0: 0.5, 15544.0: 0.5, 15543.0: 0.5, 15536.0: 0, 15537.0: 0.5, 15546.0: 0.5, 15540.0: 0.5, 15520.0: 0.5, 15493.0: 0.5, 15496.0: 0.5, 15495.0: 1.0, 15494.0: 0, 15517.0: 0.5, 15518.0: 0, 15519.0: 0.5, 15522.0: 0.5, 15514.0: 0.5, 15487.0: 0.5, 15488.0: 0, 15505.0: 0.5, 15506.0: 0, 15513.0: 0.5, 15512.0: 0, 15727.0: 0.5, 15736.0: 0.5, 15733.0: 0.5, 15734.0: 0, 15735.0: 1.0, 15730.0: 0.5, 15721.0: 0.5, 15722.0: 0, 15729.0: 1.0, 15728.0: 0, 15745.0: 0.5, 15772.0: 0.5, 15769.0: 0.5, 15770.0: 0, 15771.0: 0.5, 15774.0:

0.5, 15748.0: 0.5, 15747.0: 0.5, 15746.0: 0, 15751.0: 0.5, 15778.0: 0.5, 1577  
7.0: 0.5, 15786.0: 0.5, 15760.0: 0.5, 15759.0: 0.5, 15752.0: 0, 15753.0: 0.5,  
15780.0: 0.5, 15762.0: 0.5, 15756.0: 0.5, 15700.0: 0.5005, 15457.0: 0.5, 1546  
6.0: 0.5, 15385.0: 0.5, 15388.0: 0.5, 15387.0: 0.5, 15386.0: 0.5, 15383.0: 0.  
5, 15463.0: 0.5, 15464.0: 0.5, 15465.0: 0.5, 15468.0: 0.5, 15460.0: 0.5005, 15  
379.0: 0.5, 15380.0: 0.5, 15371.0: 1.0, 15451.0: 0.505, 15452.0: 0.55, 15459.  
0: 0.5, 15458.0: 0.5, 15377.0: 0.5, 15449.0: 0.5, 15455.0: 0.5, 15619.0: 0.5,  
15628.0: 0.5, 15625.0: 0.5, 15626.0: 0.5, 15627.0: 0.5, 15630.0: 0.5, 15622.0:  
0.5, 15613.0: 1.0, 15621.0: 0.5, 15620.0: 0.5, 15611.0: 1.0, 15617.0: 0.5, 156  
91.0: 0.505, 15694.0: 0.55, 15693.0: 0.5, 15692.0: 0.5, 15689.0: 0.5, 15697.0:  
0.5, 15706.0: 0.5, 15705.0: 0.5, 15698.0: 0.5, 15699.0: 0.5, 15708.0: 0.5, 157  
02.0: 0.5, 15682.0: 0.5, 15439.0: 0.5, 15442.0: 0.5, 15361.0: 0.5, 15362.0: 0,  
15415.0: 0.5, 15416.0: 0, 15441.0: 0.5, 15440.0: 0.5, 15359.0: 0.5, 15413.0:  
0.5, 15437.0: 0.5, 15601.0: 0.5, 15604.0: 0.5, 15577.0: 0.5, 15578.0: 0, 1560  
3.0: 0.5, 15602.0: 0.5, 15575.0: 0.5, 15599.0: 0.5, 15655.0: 0.5, 15658.0: 0.  
5, 15657.0: 1.0, 15656.0: 0.5, 15653.0: 0.5, 15679.0: 0.5, 15680.0: 0.5, 1568  
1.0: 0.5, 15684.0: 0.5, 15676.0: 0.5, 15433.0: 0.5, 15434.0: 0.5, 15353.0: 0.  
5, 15407.0: 0.5, 15425.0: 0.5, 15595.0: 0.5, 15596.0: 0.5, 15569.0: 0.5, 1558  
7.0: 1.0, 15649.0: 0.5, 15650.0: 0.5, 15641.0: 0.5, 15667.0: 0.5, 15668.0: 0.  
5, 15675.0: 0.5, 15674.0: 0.5, 15431.0: 0.5, 15593.0: 0.5, 15647.0: 0.5, 1566  
5.0: 0.5, 15671.0: 0.5, 16159.0: 0.5, 18346.0: 0.5, 18265.0: 0.5, 18994.0: 0,  
18292.0: 0.5, 18283.0: 0.5, 19012.0: 0, 18286.0: 0.5, 18285.0: 0.5, 19014.0:  
0, 18284.0: 0.5, 18281.0: 0.5, 19010.0: 0, 18289.0: 0.5, 19018.0: 0, 18298.0:  
0.5, 18297.0: 0.5, 19026.0: 0, 18290.0: 0.5, 18291.0: 0.5, 19020.0: 0, 18300.  
0: 0.5, 18294.0: 0.5, 18274.0: 0.5, 18247.0: 1.0, 18271.0: 0.5, 19000.0: 0, 18  
272.0: 0.5, 18245.0: 1.0, 18273.0: 0.5, 19002.0: 0, 18276.0: 0.5, 18249.0: 1.  
0, 18268.0: 0.5, 18241.0: 1.0, 18259.0: 0.5, 18988.0: 0, 18260.0: 0.5, 18233.  
0: 1.0, 18267.0: 0.5, 18996.0: 0, 18266.0: 0.5, 18239.0: 1.0, 18257.0: 0.5, 18  
986.0: 0, 18263.0: 0.5, 18992.0: 0, 18319.0: 0.5, 19048.0: 0, 18400.0: 0.5, 18  
391.0: 0.5, 19120.0: 0, 18394.0: 0, 18392.0: 0, 18397.0: 0.5, 19126.0: 0, 1840  
6.0: 0.5, 18405.0: 0.5, 19134.0: 0, 18398.0: 0, 18399.0: 0.5, 19128.0: 0, 1840  
8.0: 0.5, 18402.0: 0, 18328.0: 0.5, 18325.0: 0.5, 19054.0: 0, 18326.0: 0.5, 18  
327.0: 0.5, 19056.0: 0, 18330.0: 0.5, 18322.0: 0.5, 18313.0: 0.5, 19042.0: 0,  
18314.0: 0.5, 18321.0: 0.5, 19050.0: 0, 18320.0: 0.5, 18311.0: 0.5, 19040.0:  
0, 18317.0: 0.5, 19046.0: 0, 18337.0: 0.5, 19066.0: 0, 18418.0: 0.5, 18415.0:  
0.5, 19144.0: 0, 18442.0: 0.5, 18441.0: 1.0, 18416.0: 0, 18417.0: 0.5, 19146.  
0: 0, 18444.0: 0.5, 18420.0: 0, 18364.0: 0.5, 18361.0: 0.5, 19090.0: 0, 18362.  
0: 0.5, 18363.0: 0.5, 19092.0: 0, 18366.0: 0.5, 18340.0: 0.5, 18339.0: 0.5, 19  
068.0: 0, 18338.0: 0.5, 18335.0: 0.5, 19064.0: 0, 18343.0: 0.5, 19072.0: 0, 18  
424.0: 0.5, 18423.0: 0.5, 19152.0: 0, 18450.0: 0.5, 18432.0: 0.5, 18370.0: 0.  
5, 18369.0: 0.5, 19098.0: 0, 18378.0: 0.5, 18352.0: 0.5, 18351.0: 0.5, 19080.  
0: 0, 18344.0: 0.5, 18345.0: 0.5, 19074.0: 0, 18426.0: 0.5, 18372.0: 0.5, 1835  
4.0: 0.5, 18348.0: 0.5, 16888.0: 0.5, 16807.0: 0.5, 16834.0: 0.5, 16825.0: 0.  
5, 16828.0: 0.5, 16827.0: 0.5, 16826.0: 0, 16831.0: 0.5, 16840.0: 0.5, 16839.  
0: 0.5, 16832.0: 0, 16833.0: 0.5, 16842.0: 0.5, 16836.0: 0.5, 16816.0: 0.5, 16  
789.0: 1.0, 16813.0: 0.5, 16814.0: 0.5, 16787.0: 1.0, 16815.0: 0.5, 16818.0:  
0.5, 16791.0: 1.0, 16810.0: 0.5, 16783.0: 1.0, 16801.0: 0.5, 16802.0: 0.5, 167  
75.0: 1.0, 16809.0: 0.5, 16808.0: 0.5, 16781.0: 1.0, 16799.0: 0.5, 16805.0: 0.  
5, 16861.0: 0.5, 16942.0: 0.5, 16933.0: 0.5, 16936.0: 0.5, 16935.0: 0.5, 1912  
2.0: 0, 16934.0: 0, 16939.0: 0.5, 16948.0: 0, 16940.0: 0, 16941.0: 0.5, 16950.  
0: 0, 16944.0: 0.5, 16870.0: 0.5, 16867.0: 0.5, 16868.0: 0.5, 16869.0: 0.5, 16  
872.0: 0.5, 16864.0: 0.5, 16855.0: 0.5, 16856.0: 0.5, 16863.0: 0.5, 16862.0:  
0.5, 16853.0: 0.5, 16859.0: 0.5, 16879.0: 0.5, 16960.0: 0.5, 16957.0: 0.5, 169  
84.0: 0.5, 16983.0: 1.0, 16958.0: 0, 16959.0: 0.5, 16986.0: 0.5, 16962.0: 0.5,  
16906.0: 0.5, 16903.0: 0.5, 16904.0: 0, 16905.0: 0.5, 16908.0: 0.5, 16882.0:  
0.5, 16881.0: 0.5, 16880.0: 0.5, 16877.0: 0.5, 16885.0: 0.5, 16966.0: 0.5, 169  
65.0: 0.5, 16992.0: 0.5, 16974.0: 0, 16912.0: 0.5, 16911.0: 0.5, 16920.0: 0.5,  
16894.0: 0.5, 16893.0: 0.5, 16886.0: 0.5, 16887.0: 0.5, 16968.0: 0.5, 16914.0:  
0.5, 16896.0: 0.5, 16890.0: 0.5, 16240.0: 0.5, 16213.0: 0.5, 16222.0: 0.5, 162  
19.0: 0.5, 16220.0: 0, 16221.0: 0.5, 16224.0: 0.5, 16216.0: 0.5, 16207.0: 0.5,

16208.0: 0, 16215.0: 0.5, 16214.0: 0, 16231.0: 0.5, 16258.0: 0.5, 16255.0: 0.5, 16256.0: 0, 16257.0: 0.5, 16260.0: 0.5, 16234.0: 0.5, 16233.0: 0.5, 16232.0: 0, 16237.0: 0.5, 16264.0: 0.5, 16263.0: 0.5, 16272.0: 0.5, 16246.0: 0.5, 16245.0: 0.5, 16238.0: 0, 16239.0: 0.5, 16266.0: 0.5, 16248.0: 0.5, 16242.0: 0.5, 16186.0: 0.5, 16105.0: 0.5, 16114.0: 0.5, 16111.0: 0.5, 16112.0: 0.5, 16113.0: 0.5, 16116.0: 0.5, 16108.0: 0.5, 16099.0: 0.5, 16100.0: 0.5, 16107.0: 0.5, 16106.0: 0.5, 16097.0: 0.5, 16103.0: 0.5, 16177.0: 0.5, 16180.0: 0.5, 16179.0: 0.5, 16178.0: 0.5, 16175.0: 0.5, 16183.0: 0.5, 16192.0: 0.5, 16191.0: 0.5, 16184.0: 0.5, 16185.0: 0.5, 16194.0: 0.5, 16188.0: 0.5, 16168.0: 0.5, 16087.0: 0.5, 16090.0: 0.5, 16063.0: 1.0, 16089.0: 0.5, 16088.0: 0.5, 16061.0: 1.0, 16085.0: 0.5, 16141.0: 0.5, 16144.0: 0.5, 16143.0: 0.5, 16142.0: 0.5, 16139.0: 0.5, 16165.0: 0.5, 16166.0: 0.5, 16167.0: 0.5, 16170.0: 0.5, 16162.0: 0.5, 16081.0: 0.5, 16082.0: 0.5, 16055.0: 1.0, 16073.0: 0.5, 16135.0: 0.5, 16136.0: 0.5, 16127.0: 0.5, 16153.0: 0.5, 16154.0: 0.5, 16161.0: 0.5, 16160.0: 0.5, 16079.0: 0.5, 16133.0: 0.5, 16151.0: 0.5, 16157.0: 0.5, 16321.0: 0.5, 18508.0: 0.5, 18481.0: 0.5, 19210.0: 0, 18724.0: 0.5, 18715.0: 0.5, 19444.0: 0, 18718.0: 0.5, 18717.0: 0.5, 19446.0: 0, 18716.0: 0.5, 18713.0: 0.5, 19442.0: 0, 18721.0: 0.5, 19450.0: 0, 18730.0: 0, 18722.0: 0.5, 18723.0: 0.5, 19452.0: 0, 18732.0: 0, 18726.0: 0.5, 18490.0: 0.5, 18487.0: 0.5, 19216.0: 0, 18488.0: 0.5, 18489.0: 0.5, 19218.0: 0, 18492.0: 0.5, 18484.0: 0.5, 18475.0: 0.5, 19204.0: 0, 18476.0: 0.5, 18483.0: 0.5, 19212.0: 0, 18482.0: 0.5, 18473.0: 0.5, 19202.0: 0, 18479.0: 0.5, 19208.0: 0, 18499.0: 0.5, 19228.0: 0, 18742.0: 0.5, 18739.0: 0.5, 19468.0: 0, 18766.0: 0.5, 18765.0: 1.0, 18740.0: 0.5, 18741.0: 0.5, 19470.0: 0, 18768.0: 0.5, 18744.0: 0.5, 18526.0: 0.5, 18523.0: 0.5, 19252.0: 0, 18524.0: 0.5, 18525.0: 0.5, 19254.0: 0, 18528.0: 0.5, 18502.0: 0.5, 18501.0: 0.5, 19230.0: 0, 18500.0: 0.5, 18497.0: 0.5, 19226.0: 0, 18505.0: 0.5, 19234.0: 0, 18748.0: 0.5, 18747.0: 0.5, 19476.0: 0, 18774.0: 0.5, 18756.0: 0, 18532.0: 0.5, 18531.0: 0.5, 19260.0: 0, 18540.0: 0.5, 18514.0: 0.5, 18513.0: 0.5, 19242.0: 0, 18506.0: 0.5, 18507.0: 0.5, 19236.0: 0, 18750.0: 0.5, 18534.0: 0.5, 18516.0: 0.5, 18510.0: 0.5, 17050.0: 0.5, 17023.0: 0.5, 17266.0: 0.5, 17257.0: 0.5, 17260.0: 0.5, 17259.0: 0.5, 17258.0: 0.5, 17255.0: 0.5, 17263.0: 0.5, 17272.0: 0, 17264.0: 0.5, 17265.0: 0.5, 17274.0: 0, 17268.0: 0.5, 17032.0: 0.5, 17029.0: 0.5, 17030.0: 0.5, 17031.0: 0.5, 17034.0: 0.5, 17026.0: 0.5, 17017.0: 0.5, 17018.0: 0.5, 17025.0: 0.5, 17024.0: 0.5, 17015.0: 0.5, 17021.0: 0.5, 17041.0: 0.5, 17284.0: 0.5, 17281.0: 0.5, 17308.0: 0.5, 17307.0: 1.0, 17282.0: 0.5, 17283.0: 0.5, 17310.0: 0.5, 17286.0: 0.5, 17068.0: 0.5, 17065.0: 0.5, 17066.0: 0, 17067.0: 0.5, 17070.0: 0.5, 17044.0: 0.5, 17043.0: 0.5, 17042.0: 0.5, 17039.0: 0.5, 17047.0: 0.5, 17290.0: 0.5, 17289.0: 0.5, 17316.0: 0.5, 17298.0: 0, 17074.0: 0.5, 17073.0: 0.5, 17082.0: 0.5, 17056.0: 0.5, 17055.0: 0.5, 17048.0: 0.5, 17049.0: 0.5, 17292.0: 0.5, 17076.0: 0.5, 17058.0: 0.5, 17052.0: 0.5, 16564.0: 0.5, 16537.0: 0.5, 16546.0: 0, 16540.0: 0.5, 16531.0: 0.5, 16532.0: 0.5, 16539.0: 0.5, 16548.0: 0, 16538.0: 0.5, 16529.0: 0.5, 16535.0: 0.5, 16544.0: 0, 16555.0: 0.5, 16582.0: 0.5, 16579.0: 0.5, 16580.0: 0.5, 16581.0: 0.5, 16584.0: 0.5, 16558.0: 0.5, 16557.0: 0.5, 16556.0: 0.5, 16553.0: 0.5, 16561.0: 0.5, 16588.0: 0.5, 16587.0: 0.5, 16596.0: 0, 16570.0: 0, 16562.0: 0.5, 16563.0: 0.5, 16590.0: 0.5, 16572.0: 0, 16566.0: 0.5, 16348.0: 0.5, 16339.0: 0.5, 16342.0: 0.5, 16341.0: 0.5, 16340.0: 0.5, 16337.0: 0.5, 16345.0: 0.5, 16354.0: 0.5, 16353.0: 0.5, 16346.0: 0.5, 16347.0: 0.5, 16356.0: 0.5, 16350.0: 0.5, 16330.0: 0.5, 16303.0: 0.5, 16306.0: 0.5, 16305.0: 0.5, 16304.0: 0.5, 16301.0: 0.5, 16327.0: 0.5, 16328.0: 0.5, 16329.0: 0.5, 16332.0: 0.5, 16324.0: 0.5, 16297.0: 0.5, 16298.0: 0.5, 16289.0: 0.5, 16315.0: 0.5, 16316.0: 0.5, 16323.0: 0.5, 16322.0: 0.5, 16295.0: 0.5, 16313.0: 0.5, 16319.0: 0.5, 16375.0: 0.5, 18562.0: 0.5, 18553.0: 0.5, 19282.0: 0, 18796.0: 0.5, 18793.0: 0.5, 19522.0: 0, 18874.0: 0.5, 18873.0: 1.0, 18794.0: 0.5, 18795.0: 0.5, 19524.0: 0, 18876.0: 0.5, 18798.0: 0.5, 18634.0: 0.5, 18631.0: 0.5, 19360.0: 0, 18632.0: 0, 18633.0: 0.5, 19362.0: 0, 18636.0: 0, 18556.0: 0.5, 18555.0: 0.5, 19284.0: 0, 18554.0: 0.5, 18551.0: 0.5, 19280.0: 0, 18559.0: 0.5, 19288.0: 0, 18802.0: 0.5, 18801.0: 0.5, 19530.0: 0, 18882.0: 0.5, 18810.0: 0, 18640.0: 0.5, 18639.0: 0.5, 19368.0: 0, 18648.0: 0.5, 18568.0: 0.5, 18567.0: 0.5, 19296.0: 0, 18560.0: 0.5, 18561.0: 0.5, 19290.0: 0, 18804.0: 0.5, 18642.0: 0.5, 18570.0: 0.

5, 18564.0: 0.5, 17104.0: 0.5, 17095.0: 0.5, 17338.0: 0.5, 17335.0: 0.5, 17416.0: 0.5, 17415.0: 1.0, 17336.0: 0.5, 17337.0: 0.5, 17418.0: 0.5, 17340.0: 0.5, 17176.0: 0.5, 17173.0: 0.5, 17174.0: 0, 17175.0: 0.5, 17178.0: 0.5, 17098.0: 0.5, 17097.0: 0.5, 17096.0: 0.5, 17093.0: 0.5, 17101.0: 0.5, 17344.0: 0.5, 17343.0: 0.5, 17424.0: 0.5, 17352.0: 0, 17182.0: 0.5, 17181.0: 0.5, 17190.0: 0, 17110.0: 0.5, 17109.0: 0.5, 17102.0: 0.5, 17103.0: 0.5, 17346.0: 0.5, 17184.0: 0.5, 17112.0: 0.5, 17106.0: 0.5, 16618.0: 0.5, 16609.0: 0.5, 16690.0: 0.5, 16687.0: 0.5, 16688.0: 0, 16689.0: 0.5, 16692.0: 0.5, 16612.0: 0.5, 16611.0: 0.5, 16610.0: 0.5, 16607.0: 0.5, 16615.0: 0.5, 16696.0: 0.5, 16695.0: 0.5, 16704.0: 0, 16624.0: 0, 16616.0: 0.5, 16617.0: 0.5, 16698.0: 0.5, 16626.0: 0, 16620.0: 0.5, 16456.0: 0.5, 16447.0: 0.5, 16450.0: 0.5, 16449.0: 0.5, 16448.0: 0, 16453.0: 0.5, 16462.0: 0.5, 16461.0: 0.5, 16454.0: 0, 16455.0: 0.5, 16464.0: 0.5, 16458.0: 0.5, 16384.0: 0.5, 16381.0: 0.5, 16382.0: 0.5, 16383.0: 0.5, 16386.0: 0.5, 16378.0: 0.5, 16369.0: 0.5, 16370.0: 0.5, 16377.0: 0.5, 16376.0: 0.5, 16367.0: 0.5, 16373.0: 0.5, 16393.0: 0.5, 18580.0: 0.5, 18577.0: 0.5, 19306.0: 0, 18820.0: 0.5, 18819.0: 1.0, 18658.0: 0.5, 18657.0: 1.0, 18604.0: 0.5, 18603.0: 1.0, 18578.0: 0.5, 18579.0: 0.5, 19308.0: 0, 18822.0: 0.5, 18660.0: 0.5, 18606.0: 0.5, 18582.0: 0.5, 17122.0: 0.5, 17119.0: 0.5, 17362.0: 0.5, 17361.0: 1.0, 17200.0: 0.5, 17199.0: 1.0, 17146.0: 0.5, 17145.0: 1.0, 17120.0: 0.5, 17121.0: 0.5, 17364.0: 0.5, 17202.0: 0.5, 17148.0: 0.5, 17124.0: 0.5, 16636.0: 0.5, 16633.0: 0.5, 16714.0: 0.5, 16713.0: 1.0, 16660.0: 0.5, 16659.0: 1.0, 16634.0: 0.5, 16635.0: 0.5, 16716.0: 0.5, 16662.0: 0.5, 16638.0: 0.5, 16474.0: 0.5, 16471.0: 0.5, 16498.0: 0.5, 16497.0: 1.0, 16472.0: 0, 16473.0: 0.5, 16500.0: 0.5, 16476.0: 0.5, 16420.0: 0.5, 16417.0: 0.5, 16418.0: 0.5, 16419.0: 0.5, 16422.0: 0.5, 16396.0: 0.5, 16395.0: 0.5, 16394.0: 0.5, 16391.0: 0.5, 16399.0: 0.5, 18586.0: 0.5, 18585.0: 0.5, 19314.0: 0, 18828.0: 0.5, 18666.0: 0.5, 18612.0: 0.5, 18594.0: 0.5, 17128.0: 0.5, 17127.0: 0.5, 17370.0: 0.5, 17208.0: 0.5, 17154.0: 0.5, 17136.0: 0.5, 16642.0: 0.5, 16641.0: 0.5, 16722.0: 0.5, 16668.0: 0.5, 16650.0: 0, 16480.0: 0.5, 16479.0: 0.5, 16506.0: 0.5, 16488.0: 0.5, 16426.0: 0.5, 16425.0: 0.5, 16434.0: 0.5, 16408.0: 0.5, 16407.0: 0.5, 16400.0: 0.5, 16401.0: 0.5, 18588.0: 0.5, 17130.0: 0.5, 16644.0: 0.5, 16482.0: 0.5, 16428.0: 0.5, 16410.0: 0.5, 16404.0: 0.5, 12028.0: 0.5, 5467.0: 0.5, 6196.0: 0.5, 5953.0: 0.5, 6034.0: 0.5, 6007.0: 0.5, 6016.0: 0, 6010.0: 0, 6008.0: 0.5, 5999.0: 1.0, 6005.0: 0.5, 6014.0: 0, 6025.0: 1.0, 6031.0: 0.5, 6058.0: 0.5, 6049.0: 1.0, 6057.0: 0.5, 6066.0: 0, 6040.0: 0, 6032.0: 0.5, 6023.0: 1.0, 6033.0: 0.5, 6060.0: 0.5, 6051.0: 1.0, 6042.0: 0, 6036.0: 0, 5980.0: 0.5, 5899.0: 0.5, 5908.0: 0.5, 5905.0: 0.5, 5906.0: 0, 5907.0: 1.0, 5902.0: 0.5, 5893.0: 1.0, 5901.0: 1.0, 5900.0: 0, 5971.0: 1.0, 5977.0: 0.5, 5986.0: 0.5, 5985.0: 0.5, 5978.0: 0, 5979.0: 0.5, 5988.0: 0.5, 5982.0: 0.5, 5973.0: 1.0, 5962.0: 0.5, 5881.0: 0.5, 5884.0: 0.5, 5857.0: 1.0, 5883.0: 1.0, 5882.0: 0.5, 5855.0: 1.0, 5879.0: 0.5, 5935.0: 0.5, 5938.0: 0.5, 5937.0: 0.5, 6018.0: 0, 5936.0: 0.5, 5933.0: 0.5, 5959.0: 0.5, 5960.0: 0.5, 5961.0: 0.5, 5964.0: 0.5, 5956.0: 0.5, 5875.0: 0.5, 5876.0: 0.5, 5849.0: 1.0, 5867.0: 1.0, 5929.0: 0.5, 5930.0: 0.5, 5921.0: 1.0, 5947.0: 1.0, 5955.0: 0.5, 5954.0: 0.5, 5873.0: 0.5, 5927.0: 0.5, 5945.0: 1.0, 5951.0: 0.5, 6115.0: 0.5, 6358.0: 0.5, 6331.0: 0.5, 6340.0: 0.5, 6337.0: 0.5, 6338.0: 0.5, 6339.0: 1.0, 6334.0: 0.5, 6325.0: 0.5, 6326.0: 0.5, 6333.0: 1.0, 6332.0: 0.5, 6323.0: 0.5, 6329.0: 0.5, 6349.0: 0.5, 6376.0: 0.5, 6373.0: 0.5, 6374.0: 0, 6375.0: 1.0, 6352.0: 0.5, 6351.0: 1.0, 6350.0: 0.5, 6347.0: 0.5, 6355.0: 0.5, 6382.0: 0.5, 6381.0: 1.0, 6364.0: 0.5, 6363.0: 1.0, 6356.0: 0.5, 6357.0: 1.0, 6142.0: 0.5, 6133.0: 0.5, 6136.0: 0.5, 6135.0: 1.0, 6134.0: 0, 6139.0: 0.5, 6148.0: 0.5, 6147.0: 1.0, 6140.0: 0, 6141.0: 1.0, 6124.0: 0.5, 6097.0: 0.5, 6100.0: 0.5, 6099.0: 1.0, 6098.0: 0.5, 6095.0: 0.5, 6121.0: 0.5, 6122.0: 0.5, 6123.0: 1.0, 6118.0: 0.5, 6091.0: 0.5, 6092.0: 0.5, 6083.0: 0.5, 6109.0: 0.5, 6110.0: 0.5, 6117.0: 1.0, 6116.0: 0.5, 6089.0: 0.5, 6107.0: 0.5, 6113.0: 0.5, 6169.0: 0.5, 6412.0: 0.5, 6403.0: 0.5, 6484.0: 0.5, 6481.0: 0.5, 6482.0: 0.5, 6483.0: 0.5, 6486.0: 0, 6406.0: 0.5, 6405.0: 0.5, 6404.0: 0.5, 6401.0: 0.5, 6409.0: 0.5, 6490.0: 0.5, 6489.0: 0.5, 6498.0: 0, 6418.0: 0.5, 6417.0: 0.5, 6410.0: 0.5, 6411.0: 0.5, 6492.0: 0.5, 6420.0: 0.5, 6414.0: 0.5, 6250.0: 0.5, 6241.0: 0.5, 6244.0: 0, 6242.0: 0.5, 6239.0: 0.5, 6247.0: 0.5, 6256.0: 0, 6248.0: 0.5, 6249.0: 0.5, 6258.0: 0, 6252.0: 0, 6178.0: 0.5, 6175.0: 0.5, 6

176.0: 0.5, 6177.0: 0.5, 6180.0: 0.5, 6172.0: 0.5, 6163.0: 0.5, 6164.0: 0.5, 6  
171.0: 0.5, 6170.0: 0.5, 6161.0: 0.5, 6167.0: 0.5, 6187.0: 0.5, 6430.0: 0.5, 6  
427.0: 0.5, 6508.0: 0.5, 6507.0: 1.0, 6454.0: 0.5, 6453.0: 1.0, 6428.0: 0.5, 6  
429.0: 0.5, 6510.0: 0.5, 6456.0: 0.5, 6432.0: 0.5, 6268.0: 0.5, 6265.0: 0.5, 6  
292.0: 0.5, 6291.0: 1.0, 6266.0: 0.5, 6267.0: 0.5, 6294.0: 0.5, 6270.0: 0, 621  
4.0: 0.5, 6211.0: 0.5, 6212.0: 0, 6213.0: 0.5, 6216.0: 0.5, 6190.0: 0.5, 6189.  
0: 0.5, 6188.0: 0.5, 6185.0: 0.5, 6193.0: 0.5, 6436.0: 0.5, 6435.0: 0.5, 6516.  
0: 0.5, 6462.0: 0.5, 6444.0: 0.5, 6274.0: 0.5, 6273.0: 0.5, 6300.0: 0.5, 6282.  
0: 0, 6220.0: 0.5, 6219.0: 0.5, 6228.0: 0.5, 6202.0: 0.5, 6201.0: 0.5, 6194.0:  
0.5, 6195.0: 0.5, 6438.0: 0.5, 6276.0: 0.5, 6222.0: 0.5, 6204.0: 0.5, 6198.0:  
0.5, 5710.0: 0.5, 4981.0: 0.5, 5062.0: 0.5, 5035.0: 0.5, 5044.0: 0.5, 5041.0:  
0.5, 5042.0: 0.5, 5043.0: 1.0, 5038.0: 0, 5036.0: 0.5, 5027.0: 0.5, 5030.0: 0,  
5033.0: 0.5, 5053.0: 0.5, 5080.0: 0, 5056.0: 0, 5054.0: 0.5, 5051.0: 0.5, 507  
8.0: 0, 5059.0: 0.5, 5086.0: 0, 5068.0: 0.5, 5067.0: 0.5, 5094.0: 0, 5060.0:  
0.5, 5061.0: 0.5, 5088.0: 0, 5070.0: 0.5, 5064.0: 0, 5008.0: 0.5, 4927.0: 0.5,  
4936.0: 0.5, 4933.0: 0.5, 4934.0: 0.5, 4935.0: 1.0, 4930.0: 0.5, 4921.0: 1.0,  
4929.0: 1.0, 4928.0: 0.5, 4919.0: 1.0, 4925.0: 0.5, 4999.0: 0.5, 5002.0: 0.5,  
5001.0: 0.5, 5082.0: 0, 5000.0: 0.5, 4997.0: 0.5, 5005.0: 0.5, 5014.0: 0.5, 50  
13.0: 0.5, 5006.0: 0.5, 5007.0: 0.5, 5016.0: 0.5, 5010.0: 0.5, 4990.0: 0.5, 49  
09.0: 0.5, 4912.0: 0.5, 4885.0: 0.5, 4886.0: 0, 4911.0: 1.0, 4910.0: 0.5, 488  
3.0: 0.5, 4907.0: 0.5, 4963.0: 0.5, 4966.0: 0.5, 4965.0: 1.0, 4964.0: 0.5, 496  
1.0: 0.5, 4987.0: 0.5, 4988.0: 0.5, 4989.0: 0.5, 4992.0: 0.5, 4984.0: 0.5, 490  
3.0: 0.5, 4904.0: 0.5, 4877.0: 0.5, 4895.0: 1.0, 4957.0: 0.5, 4958.0: 0.5, 494  
9.0: 0.5, 4975.0: 0.5, 4976.0: 0.5, 4983.0: 0.5, 4982.0: 0.5, 4901.0: 0.5, 495  
5.0: 0.5, 4973.0: 0.5, 4979.0: 0.5, 5629.0: 0.5, 5656.0: 0.5, 5647.0: 0.5, 565  
0.0: 0.5, 5649.0: 1.0, 5648.0: 0.5, 5645.0: 0.5, 5653.0: 0.5, 5662.0: 0.5, 566  
1.0: 1.0, 5654.0: 0.5, 5655.0: 1.0, 5638.0: 0.5, 5611.0: 0.5, 5614.0: 0.5, 561  
3.0: 1.0, 5612.0: 0.5, 5609.0: 0.5, 5635.0: 0.5, 5636.0: 0.5, 5637.0: 1.0, 563  
2.0: 0.5, 5605.0: 0.5, 5606.0: 0.5, 5597.0: 0.5, 5623.0: 0.5, 5624.0: 0.5, 563  
1.0: 1.0, 5630.0: 0.5, 5603.0: 0.5, 5621.0: 0.5, 5627.0: 0.5, 5683.0: 0.5, 576  
4.0: 0.5, 5755.0: 0.5, 5758.0: 0, 5756.0: 0.5, 5753.0: 0.5, 5761.0: 0.5, 5770.  
0: 0.5, 5769.0: 0.5, 5762.0: 0.5, 5763.0: 0.5, 5772.0: 0.5, 5766.0: 0, 5692.0:  
0.5, 5689.0: 0.5, 5690.0: 0.5, 5691.0: 0.5, 5694.0: 0.5, 5686.0: 0.5, 5677.0:  
0.5, 5678.0: 0.5, 5685.0: 0.5, 5684.0: 0.5, 5675.0: 0.5, 5681.0: 0.5, 5701.0:  
0.5, 5782.0: 0.5, 5779.0: 0.5, 5806.0: 0, 5780.0: 0.5, 5781.0: 0.5, 5808.0: 0,  
5784.0: 0, 5728.0: 0.5, 5725.0: 0.5, 5726.0: 0.5, 5727.0: 0.5, 5730.0: 0.5, 57  
04.0: 0.5, 5703.0: 0.5, 5702.0: 0.5, 5699.0: 0.5, 5707.0: 0.5, 5788.0: 0.5, 57  
87.0: 0.5, 5814.0: 0, 5796.0: 0.5, 5734.0: 0.5, 5733.0: 0.5, 5742.0: 0.5, 571  
6.0: 0.5, 5715.0: 0.5, 5708.0: 0.5, 5709.0: 0.5, 5790.0: 0.5, 5736.0: 0.5, 571  
8.0: 0.5, 5712.0: 0.5, 5548.0: 0.5, 4819.0: 0.5, 4846.0: 0.5, 4603.0: 0.5, 461  
2.0: 0.5, 4609.0: 0.5, 4610.0: 0.5, 4611.0: 0.5, 4614.0: 0, 4606.0: 0, 4604.0:  
0.5, 4595.0: 1.0, 4601.0: 0.5, 4837.0: 0.5, 4840.0: 0, 4838.0: 0.5, 4835.0: 0.  
5, 4843.0: 0.5, 4852.0: 0.5, 4851.0: 0.5, 4844.0: 0.5, 4845.0: 0.5, 4854.0: 0.  
5, 4848.0: 0, 4828.0: 0.5, 4585.0: 0.5, 4588.0: 0, 4586.0: 0.5, 4559.0: 0.5, 4  
562.0: 0, 4583.0: 0.5, 4801.0: 0.5, 4804.0: 0, 4802.0: 0.5, 4799.0: 0.5, 4825.  
0: 0.5, 4826.0: 0.5, 4827.0: 0.5, 4830.0: 0, 4822.0: 0, 4820.0: 0.5, 4577.0:  
0.5, 4580.0: 0, 4793.0: 0.5, 4796.0: 0, 4811.0: 0.5, 4814.0: 0, 4817.0: 0.5, 5  
305.0: 0.5, 5332.0: 0.5, 5323.0: 1.0, 5329.0: 0.5, 5338.0: 0.5, 5337.0: 0.5, 5  
330.0: 0.5, 5321.0: 1.0, 5331.0: 0.5, 5340.0: 0.5, 5334.0: 0, 5314.0: 0.5, 528  
7.0: 0.5, 5290.0: 0, 5288.0: 0.5, 5285.0: 0.5, 5311.0: 0.5, 5312.0: 0.5, 5313.  
0: 0.5, 5316.0: 0, 5308.0: 0, 5306.0: 0.5, 5279.0: 0.5, 5282.0: 0, 5297.0: 1.  
0, 5303.0: 0.5, 5521.0: 0.5, 5530.0: 0.5, 5527.0: 0.5, 5528.0: 0.5, 5529.0: 0.  
5, 5532.0: 0, 5524.0: 0, 5522.0: 0.5, 5513.0: 0.5, 5516.0: 0, 5519.0: 0.5, 553  
9.0: 0.5, 5566.0: 0.5, 5563.0: 0.5, 5564.0: 0.5, 5565.0: 0.5, 5568.0: 0, 5542.  
0: 0, 5540.0: 0.5, 5537.0: 0.5, 5545.0: 0.5, 5572.0: 0.5, 5571.0: 0.5, 5580.0:  
0.5, 5554.0: 0.5, 5553.0: 0.5, 5546.0: 0.5, 5547.0: 0.5, 5574.0: 0.5, 5556.0:  
0.5, 5550.0: 0, 5494.0: 0.5, 4765.0: 0.5, 4774.0: 0.5, 4531.0: 0.5, 4534.0: 0.  
5, 4453.0: 0.5, 4454.0: 0, 4533.0: 0.5, 4532.0: 0.5, 4451.0: 0.5, 4529.0: 0.5,  
4693.0: 0.5, 4696.0: 0.5, 4695.0: 1.0, 4694.0: 0.5, 4691.0: 0.5, 4771.0: 0.5,  
4772.0: 0.5, 4773.0: 0.5, 4776.0: 0.5, 4768.0: 0.5, 4525.0: 0.5, 4526.0: 0.5,



4445.0: 0.5, 4517.0: 1.0, 4687.0: 0.5, 4688.0: 0.5, 4679.0: 1.0, 4759.0: 0.5,  
4760.0: 0.5, 4767.0: 0.5, 4766.0: 0.5, 4523.0: 0.5, 4685.0: 0.5, 4757.0: 0.5,  
4763.0: 0.5, 5251.0: 0.5, 5260.0: 0.5, 5179.0: 0.5, 5182.0: 0.5, 5181.0: 1.0,  
5180.0: 0.5, 5177.0: 0.5, 5257.0: 0.5, 5258.0: 0.5, 5259.0: 0.5, 5262.0: 0.5,  
5254.0: 0.5, 5173.0: 0.5, 5174.0: 0.5, 5165.0: 1.0, 5245.0: 1.0, 5253.0: 0.5,  
5252.0: 0.5, 5171.0: 0.5, 5243.0: 1.0, 5249.0: 0.5, 5413.0: 0.5, 5422.0: 0.5,  
5419.0: 0.5, 5420.0: 0.5, 5421.0: 1.0, 5416.0: 0.5, 5407.0: 0.5, 5408.0: 0.5,  
5415.0: 1.0, 5414.0: 0.5, 5405.0: 0.5, 5411.0: 0.5, 5485.0: 0.5, 5488.0: 0.5,  
5487.0: 0.5, 5486.0: 0.5, 5483.0: 0.5, 5491.0: 0.5, 5500.0: 0.5, 5499.0: 0.5,  
5492.0: 0.5, 5493.0: 0.5, 5502.0: 0.5, 5496.0: 0.5, 5476.0: 0.5, 4747.0: 0.5,  
4750.0: 0.5, 4507.0: 0.5, 4508.0: 0, 4669.0: 0.5, 4670.0: 0, 4723.0: 0.5, 472  
4.0: 0, 4749.0: 0.5, 4748.0: 0.5, 4505.0: 0.5, 4667.0: 0.5, 4721.0: 0.5, 4745.  
0: 0.5, 5233.0: 0.5, 5236.0: 0.5, 5155.0: 0.5, 5156.0: 0, 5209.0: 0.5, 5210.0:  
0, 5235.0: 0.5, 5234.0: 0.5, 5153.0: 0.5, 5207.0: 0.5, 5231.0: 0.5, 5395.0: 0.  
5, 5398.0: 0.5, 5371.0: 0.5, 5372.0: 0, 5397.0: 1.0, 5396.0: 0.5, 5369.0: 0.5,  
5393.0: 0.5, 5449.0: 0.5, 5452.0: 0.5, 5451.0: 0.5, 5450.0: 0.5, 5447.0: 0.5,  
5473.0: 0.5, 5474.0: 0.5, 5475.0: 0.5, 5478.0: 0.5, 5470.0: 0.5, 4741.0: 0.5,  
4742.0: 0.5, 4499.0: 0.5, 4661.0: 0.5, 4715.0: 0.5, 4733.0: 0.5, 5227.0: 0.5,  
5228.0: 0.5, 5147.0: 0.5, 5201.0: 0.5, 5219.0: 1.0, 5389.0: 0.5, 5390.0: 0.5,  
5363.0: 0.5, 5381.0: 0.5, 5443.0: 0.5, 5444.0: 0.5, 5435.0: 0.5, 5461.0: 0.5,  
5462.0: 0.5, 5469.0: 0.5, 5468.0: 0.5, 4739.0: 0.5, 5225.0: 0.5, 5387.0: 0.5,  
5441.0: 0.5, 5459.0: 0.5, 5465.0: 0.5, 11299.0: 0.5, 11542.0: 0.5, 11461.0: 0.  
5, 11488.0: 0.5, 11479.0: 1.0, 11485.0: 0.5, 11494.0: 0.5, 11493.0: 0.45, 1148  
6.0: 0.5, 11477.0: 1.0, 11487.0: 0.5, 11496.0: 0.5, 11490.0: 0.5, 11481.0: 1.  
0, 11470.0: 0.5, 11443.0: 0.5, 11446.0: 0.5, 11445.0: 1.0, 11444.0: 0.5, 1144  
1.0: 0.5, 11467.0: 0.5, 11468.0: 0.5, 11469.0: 0.5, 11472.0: 0.5, 11464.0: 0.  
5, 11437.0: 0.5, 11438.0: 0.5, 11429.0: 1.0, 11455.0: 1.0, 11463.0: 0.5, 1146  
2.0: 0.5, 11435.0: 0.5, 11453.0: 1.0, 11459.0: 0.5, 11515.0: 0.5, 11596.0: 0.  
5, 11587.0: 0.5, 11590.0: 0, 11588.0: 0.5, 11585.0: 0.5, 11593.0: 0.5, 11602.  
0: 0.5, 11601.0: 1.0, 11594.0: 0.5, 11595.0: 1.0, 11524.0: 0.5, 11521.0: 0.5,  
11522.0: 0.5, 11523.0: 1.0, 11518.0: 0.5, 11509.0: 0.5, 11510.0: 0.5, 11517.0:  
1.0, 11516.0: 0.5, 11507.0: 0.5, 11513.0: 0.5, 11533.0: 0.5, 11614.0: 0.5, 116  
11.0: 0.5, 11638.0: 0, 11612.0: 0.5, 11613.0: 0.5, 11640.0: 0, 11616.0: 0, 115  
60.0: 0.5, 11557.0: 0.5, 11558.0: 0.5, 11559.0: 0.5, 11562.0: 0.5, 11536.0: 0.  
5, 11535.0: 0.5, 11534.0: 0.5, 11531.0: 0.5, 11539.0: 0.5, 11620.0: 0.5, 1161  
9.0: 0.5, 11646.0: 0, 11628.0: 0.5, 11566.0: 0.5, 11565.0: 0.5, 11574.0: 0.49  
5, 11548.0: 0.5, 11547.0: 0.5, 11540.0: 0.5, 11541.0: 0.5, 11622.0: 0.5, 1156  
8.0: 0.5, 11550.0: 0.5, 11544.0: 0.5, 11380.0: 0.5, 11137.0: 0.5, 11164.0: 0.  
5, 11155.0: 0.5, 11158.0: 0, 11156.0: 0.5, 11153.0: 0.5, 11161.0: 0.5, 11170.  
0: 0.5, 11169.0: 0.5, 11162.0: 0.5, 11163.0: 0.5, 11172.0: 0.5, 11166.0: 0, 11  
146.0: 0.5, 11119.0: 0.5, 11122.0: 0, 11120.0: 0.5, 11117.0: 0.5, 11143.0: 0.  
5, 11144.0: 0.5, 11145.0: 0.5, 11148.0: 0, 11140.0: 0, 11138.0: 0.5, 11111.0:  
0.5, 11114.0: 0, 11129.0: 0.5, 11132.0: 0, 11135.0: 0.5, 11353.0: 0.5, 11362.  
0: 0.5, 11359.0: 0.5, 11360.0: 0.5, 11361.0: 1.0, 11356.0: 0, 11354.0: 0.5, 11  
345.0: 0.5, 11348.0: 0, 11351.0: 0.5, 11371.0: 0.5, 11398.0: 0.5, 11395.0: 0.  
5, 11396.0: 0.5, 11397.0: 0.5, 11400.0: 0, 11374.0: 0, 11372.0: 0.5, 11369.0:  
0.5, 11377.0: 0.5, 11404.0: 0.5, 11403.0: 0.5, 11412.0: 0.5, 11386.0: 0.5, 113  
85.0: 0.5, 11378.0: 0.5, 11379.0: 0.5, 11406.0: 0.5, 11388.0: 0.5, 11382.0: 0,  
11326.0: 0.5, 11083.0: 0.5, 11092.0: 0.5, 11011.0: 0.5, 11014.0: 0.5, 11013.0:  
0.5, 11012.0: 0.5, 11009.0: 0.5, 11089.0: 0.5, 11090.0: 0.5, 11091.0: 0.5, 110  
94.0: 0.5, 11086.0: 0.5, 11005.0: 0.5, 11006.0: 0.5, 10997.0: 1.0, 11077.0: 0.  
5, 11078.0: 0.5, 11085.0: 0.5, 11084.0: 0.5, 11003.0: 0.5, 11075.0: 0.5, 1108  
1.0: 0.5, 11245.0: 0.5, 11254.0: 0.5, 11251.0: 0.5, 11252.0: 0.5, 11253.0: 0.  
5, 11256.0: 0.5, 11248.0: 0.5, 11239.0: 1.0, 11247.0: 0.5, 11246.0: 0.5, 1123  
7.0: 1.0, 11243.0: 0.5, 11317.0: 0.5, 11320.0: 0.5, 11319.0: 0.5, 11318.0: 0.  
5, 11315.0: 0.5, 11323.0: 0.5, 11332.0: 0.49995, 11331.0: 0.4995, 11324.0: 0.  
5, 11325.0: 0.5, 11334.0: 0.5, 11328.0: 0.5, 11308.0: 0.5, 11065.0: 0.5, 1106  
8.0: 0.5, 10987.0: 0.5, 10988.0: 0, 11041.0: 0.5, 11042.0: 0, 11067.0: 0.5, 11  
066.0: 0.5, 10985.0: 0.5, 11039.0: 0.5, 11063.0: 0.5, 11227.0: 0.5, 11230.0:  
0.5, 11203.0: 0.5, 11204.0: 0, 11229.0: 0.5, 11228.0: 0.5, 11201.0: 0.5, 1122

5.0: 0.5, 11281.0: 0.5, 11284.0: 0.5, 11283.0: 1.0, 11282.0: 0.5, 11279.0: 0.5, 11305.0: 0.5, 11306.0: 0.5, 11307.0: 0.5, 11310.0: 0.5, 11302.0: 0.5, 11059.0: 0.5, 11060.0: 0.5, 10979.0: 0.5, 11033.0: 0.5, 11051.0: 0.5, 11221.0: 0.5, 11222.0: 0.5, 11195.0: 0.5, 11213.0: 1.0, 11275.0: 0.5, 11276.0: 0.5, 11267.0: 0.5, 11293.0: 0.5, 11294.0: 0.5, 11301.0: 0.5, 11300.0: 0.5, 11057.0: 0.5, 11219.0: 0.5, 11273.0: 0.5, 11291.0: 0.5, 11297.0: 0.5, 11785.0: 0.5, 12514.0: 0.5, 12433.0: 0.5, 12460.0: 0.5, 12451.0: 0.5, 12454.0: 0.5, 12453.0: 0.5, 12452.0: 0, 12457.0: 0.5, 12466.0: 0.5, 12465.0: 0.5, 12458.0: 0, 12459.0: 0.5, 12468.0: 0.5, 12462.0: 0.5, 12442.0: 0.5, 12415.0: 1.0, 12439.0: 0.5, 12440.0: 0.5, 12413.0: 1.0, 12441.0: 0.5, 12444.0: 0.5, 12417.0: 1.0, 12436.0: 0.5, 12409.0: 1.0, 12427.0: 0.5, 12428.0: 0.5, 12401.0: 1.0, 12435.0: 0.5, 12434.0: 0.5, 12407.0: 1.0, 12425.0: 0.5, 12431.0: 0.5, 12487.0: 0.5, 12568.0: 0.5, 12559.0: 0.5, 12562.0: 0, 12560.0: 0.5, 12557.0: 0.5, 19118.0: 0, 12565.0: 0.5, 12574.0: 0, 12566.0: 0.5, 12567.0: 0.5, 12576.0: 0, 12570.0: 0, 12496.0: 0.5, 12493.0: 0.5, 12494.0: 0.5, 12495.0: 0.5, 12498.0: 0.5, 12490.0: 0.5, 12481.0: 0.5, 12482.0: 0.5, 12489.0: 0.5, 12488.0: 0.5, 12479.0: 0.5, 12485.0: 0.5, 12505.0: 0.5, 12586.0: 0.5, 12583.0: 0.5, 12610.0: 0.5, 12609.0: 1.0, 12584.0: 0.5, 12585.0: 0.5, 12612.0: 0.5, 12588.0: 0, 12532.0: 0.5, 12529.0: 0.5, 12530.0: 0, 12531.0: 0.5, 12534.0: 0.5, 12508.0: 0.5, 12507.0: 0.5, 12506.0: 0.5, 12503.0: 0.5, 12511.0: 0.5, 12592.0: 0.5, 12591.0: 0.5, 12618.0: 0.5, 12600.0: 0, 12538.0: 0.5, 12537.0: 0.5, 12546.0: 0.5, 12520.0: 0.5, 12519.0: 0.5, 12512.0: 0.5, 12513.0: 0.5, 12594.0: 0.5, 12540.0: 0.5, 12522.0: 0.5, 12516.0: 0.5, 11866.0: 0.5, 11839.0: 0.5, 11848.0: 0.5, 11845.0: 0.5, 11846.0: 0.5, 11847.0: 0.5, 11850.0: 0, 11842.0: 0, 11840.0: 0.5, 11831.0: 0.5, 11834.0: 0, 11837.0: 0.5, 11857.0: 0.5, 11884.0: 0.5, 11881.0: 0.5, 11882.0: 0.5, 11883.0: 0.5, 11886.0: 0, 11860.0: 0, 11858.0: 0.5, 11855.0: 0.5, 11863.0: 0.5, 11890.0: 0.5, 11889.0: 0.5, 11898.0: 0.5, 11872.0: 0.5, 11871.0: 0.5, 11864.0: 0.5, 11865.0: 0.5, 11892.0: 0.5, 11874.0: 0.5, 11868.0: 0, 11812.0: 0.5, 11731.0: 0.5, 11740.0: 0.5, 11737.0: 0.5, 11738.0: 0.5, 11739.0: 0.5, 11742.0: 0.5, 11734.0: 0.5, 11725.0: 0.5, 11726.0: 0.5, 11733.0: 0.5, 11732.0: 0.5, 11723.0: 0.5, 11729.0: 0.5, 11803.0: 0.5, 11806.0: 0.5, 11805.0: 0.5, 11804.0: 0.5, 11801.0: 0.5, 11809.0: 0.5, 11818.0: 0.5, 11817.0: 0.5, 11810.0: 0.5, 11811.0: 0.5, 11820.0: 0.5, 11814.0: 0.5, 11794.0: 0.5, 11713.0: 0.5, 11716.0: 0.5, 11689.0: 1.0, 11715.0: 0.5, 11714.0: 0.5, 11687.0: 1.0, 11711.0: 0.5, 11767.0: 0.5, 11770.0: 0.5, 11769.0: 0.5, 11768.0: 0.5, 11765.0: 0.5, 11791.0: 0.5, 11792.0: 0.5, 11793.0: 0.5, 11796.0: 0.5, 11788.0: 0.5, 11707.0: 0.5, 11708.0: 0.5, 11681.0: 1.0, 11699.0: 0.5, 11761.0: 0.5, 11762.0: 0.5, 11753.0: 0.5, 11779.0: 0.5, 11780.0: 0.5, 11787.0: 0.5, 11786.0: 0.5, 11705.0: 0.5, 11759.0: 0.5, 11777.0: 0.5, 11783.0: 0.5, 11947.0: 0.5, 12676.0: 0.5, 12649.0: 0.5, 12892.0: 0.5, 12883.0: 0.5, 12886.0: 0.5, 12885.0: 0.5, 12884.0: 0.5, 12881.0: 0.5, 12889.0: 0.5, 12898.0: 0.5, 12897.0: 0.5, 19458.0: 0, 12890.0: 0.5, 12891.0: 0.5, 12900.0: 0.5, 12894.0: 0.5, 12658.0: 0.5, 12655.0: 0.5, 12656.0: 0.5, 12657.0: 0.5, 12660.0: 0.5, 12652.0: 0.5, 12643.0: 0.5, 12644.0: 0.5, 12651.0: 0.5, 12650.0: 0.5, 12641.0: 0.5, 12647.0: 0.5, 12667.0: 0.5, 12910.0: 0.5, 12907.0: 0.5, 12934.0: 0.5, 12933.0: 1.0, 12908.0: 0.5, 12909.0: 0.5, 12936.0: 0.5, 12912.0: 0.5, 12694.0: 0.5, 12691.0: 0.5, 12692.0: 0, 12693.0: 0.5, 12696.0: 0.5, 12670.0: 0.5, 12669.0: 0.5, 12668.0: 0.5, 12665.0: 0.5, 12673.0: 0.5, 12916.0: 0.5, 12915.0: 0.5, 12942.0: 0.5, 12924.0: 0.5, 12700.0: 0.5, 12699.0: 0.5, 12708.0: 0.5, 12682.0: 0.5, 12681.0: 0.5, 12674.0: 0.5, 12675.0: 0.5, 12918.0: 0.5, 12702.0: 0.5, 12684.0: 0.5, 12678.0: 0.5, 12190.0: 0.5, 12163.0: 0.5, 12172.0: 0.5, 12169.0: 0.5, 12170.0: 0.5, 12171.0: 0.5, 12174.0: 0.5, 12166.0: 0.5, 12157.0: 0.5, 12158.0: 0.5, 12165.0: 0.5, 12164.0: 0.5, 12155.0: 0.5, 12161.0: 0.5, 12181.0: 0.5, 12208.0: 0.5, 12205.0: 0.5, 12206.0: 0.5, 12207.0: 0.5, 12210.0: 0.5, 12184.0: 0.5, 12183.0: 0.5, 12182.0: 0.5, 12179.0: 0.5, 12187.0: 0.5, 12214.0: 0.5, 12213.0: 0.5, 12222.0: 0.5, 12196.0: 0.5, 12195.0: 0.5, 12188.0: 0.5, 12189.0: 0.5, 12216.0: 0.5, 12198.0: 0.5, 12192.0: 0.5, 11974.0: 0.5, 11965.0: 0.5, 11968.0: 0.5, 11967.0: 0.5, 11966.0: 0.5, 11963.0: 0.5, 11971.0: 0.5, 11980.0: 0.5, 11979.0: 0.5, 11972.0: 0.5, 11973.0: 0.5, 11982.0: 0.5, 11976.0: 0.5, 11956.0: 0.5, 11929.0: 0.5, 11932.0: 0.5, 11931.0: 0.5, 11930.0: 0.5, 11927.0: 0.5, 11953.0: 0.5, 11954.0: 0.5, 11955.0: 0.5, 1195

8.0: 0.5, 11950.0: 0.5, 11923.0: 0.5, 11924.0: 0.5, 11915.0: 0.5, 11941.0: 0.5, 11942.0: 0.5, 11949.0: 0.5, 11948.0: 0.5, 11921.0: 0.5, 11939.0: 0.5, 11945.0: 0.5, 12001.0: 0.5, 12730.0: 0.5, 12721.0: 0.5, 12964.0: 0.5, 12961.0: 0.5, 13042.0: 0.5, 13041.0: 1.0, 12962.0: 0.5, 12963.0: 0.5, 13044.0: 0.5, 12966.0: 0.5, 12802.0: 0.5, 12799.0: 0.5, 12800.0: 0.5, 12801.0: 0.5, 12804.0: 0, 12724.0: 0.5, 12723.0: 0.5, 12722.0: 0.5, 12719.0: 0.5, 12727.0: 0.5, 12970.0: 0.5, 12969.0: 0.5, 13050.0: 0.5, 12978.0: 0.5, 12808.0: 0.5, 12807.0: 0.5, 12816.0: 0, 12736.0: 0.5, 12735.0: 0.5, 12728.0: 0.5, 12729.0: 0.5, 12972.0: 0.5, 12810.0: 0.5, 12738.0: 0.5, 12732.0: 0.5, 12244.0: 0.5, 12235.0: 0.5, 12316.0: 0.5, 12313.0: 0.5, 12314.0: 0.5, 12315.0: 0.5, 12318.0: 0, 12238.0: 0.5, 12237.0: 0.5, 12236.0: 0.5, 12233.0: 0.5, 12241.0: 0.5, 12322.0: 0.5, 12321.0: 0.5, 12330.0: 0.5, 12250.0: 0.5, 12249.0: 0.5, 12242.0: 0.5, 12243.0: 0.5, 12324.0: 0.5, 12252.0: 0.5, 12246.0: 0.5, 12082.0: 0.5, 12073.0: 0.5, 12076.0: 0, 12074.0: 0.5, 12071.0: 0.5, 12079.0: 0.5, 12088.0: 0.5, 12087.0: 0.5, 12080.0: 0.5, 12081.0: 0.5, 12090.0: 0.5, 12084.0: 0, 12010.0: 0.5, 12007.0: 0.5, 12008.0: 0.5, 12009.0: 0.5, 12012.0: 0.5, 12004.0: 0.5, 11995.0: 0.5, 11996.0: 0.5, 12003.0: 0.5, 12002.0: 0.5, 11993.0: 0.5, 11999.0: 0.5, 12019.0: 0.5, 12748.0: 0.5, 12745.0: 0.5, 12988.0: 0.5, 12987.0: 1.0, 12826.0: 0.5, 12825.0: 1.0, 12772.0: 0.5, 12771.0: 1.0, 12746.0: 0.5, 12747.0: 0.5, 12990.0: 0.5, 12828.0: 0.5, 12774.0: 0.5, 12750.0: 0.5, 12262.0: 0.5, 12259.0: 0.5, 12340.0: 0.5, 12339.0: 1.0, 12286.0: 0.5, 12285.0: 1.0, 12260.0: 0.5, 12261.0: 0.5, 12342.0: 0.5, 12288.0: 0.5, 12264.0: 0.5, 12100.0: 0.5, 12097.0: 0.5, 12124.0: 0.5, 12123.0: 1.0, 12098.0: 0.5, 12099.0: 0.5, 12126.0: 0.5, 12102.0: 0, 12046.0: 0.5, 12043.0: 0.5, 12044.0: 0.5, 12045.0: 0.5, 12048.0: 0.5, 12022.0: 0.5, 12021.0: 0.5, 12020.0: 0.5, 12017.0: 0.5, 12025.0: 0.5, 12754.0: 0.5, 12753.0: 0.5, 12996.0: 0.5, 12834.0: 0.5, 12780.0: 0.5, 12762.0: 0.5, 12268.0: 0.5, 12267.0: 0.5, 12348.0: 0.5, 12294.0: 0.5, 12276.0: 0.5, 12106.0: 0.5, 12105.0: 0.5, 12132.0: 0.5, 12114.0: 0.5, 12052.0: 0.5, 12051.0: 0.5, 12060.0: 0.5, 12034.0: 0.5, 12033.0: 0.5, 12026.0: 0.5, 12027.0: 0.5, 12756.0: 0.5, 12270.0: 0.5, 12108.0: 0.5, 12054.0: 0.5, 12036.0: 0.5, 12030.0: 0.5, 10570.0: 0.5, 4009.0: 0.5, 4252.0: 0.5, 2065.0: 0.5, 2146.0: 0.5, 2119.0: 0.5, 2128.0: 0, 2122.0: 0.5, 2113.0: 0.5, 2114.0: 0.5, 2121.0: 0.5, 2130.0: 0, 2120.0: 0.5, 2111.0: 0.5, 2117.0: 0.5, 2126.0: 0, 2137.0: 0.5, 2164.0: 0, 2140.0: 0.5, 2139.0: 0.5, 2166.0: 0, 2138.0: 0.5, 2135.0: 0.5, 2162.0: 0, 2143.0: 0.5, 2170.0: 0, 2152.0: 0, 2144.0: 0.5, 2145.0: 0.5, 2172.0: 0, 2154.0: 0, 2148.0: 0.5, 2092.0: 0.5, 2011.0: 0.5, 2020.0: 0.5, 2017.0: 1.0, 2019.0: 1.0, 2014.0: 0.5, 2005.0: 0.5, 2006.0: 0, 2013.0: 1.0, 2012.0: 0, 2083.0: 0.5, 2086.0: 0.5, 2085.0: 0.5, 2084.0: 0, 2089.0: 0.5, 2098.0: 0.5, 2097.0: 0.5, 2178.0: 0, 2090.0: 0, 2091.0: 0.5, 2100.0: 0.5, 2094.0: 0.5, 2074.0: 0.5, 1993.0: 0.5, 1996.0: 0.5, 1969.0: 0.5, 1970.0: 0, 1995.0: 1.0, 1994.0: 0.5, 1967.0: 0.5, 1991.0: 1.0, 2047.0: 0.5, 2050.0: 0.5, 2049.0: 0.5, 2048.0: 0.5, 2045.0: 0.5, 2071.0: 0.5, 2072.0: 0.5, 2073.0: 0.5, 2076.0: 0.5, 2068.0: 0.5, 1987.0: 0.5, 1988.0: 0.5, 1961.0: 0.5, 1979.0: 0.5, 2041.0: 0.5, 2042.0: 0.5, 2033.0: 0.5, 2059.0: 0.5, 2060.0: 0.5, 2067.0: 0.5, 2066.0: 0.5, 1985.0: 0.5, 2039.0: 0.5, 2057.0: 0.5, 2063.0: 0.5, 4171.0: 0.5, 4198.0: 0.5, 4189.0: 0.5, 4192.0: 0.5, 4191.0: 1.0, 4190.0: 0, 4195.0: 0.5, 4204.0: 0.5, 4203.0: 1.0, 4196.0: 0, 4197.0: 1.0, 4180.0: 0.5, 4153.0: 0.5, 4156.0: 0.5, 4155.0: 1.0, 4154.0: 0.5, 4151.0: 0.5, 4177.0: 0.5, 4178.0: 0.5, 4179.0: 1.0, 4174.0: 0.5, 4147.0: 0.5, 4148.0: 0.5, 4139.0: 0.5, 4165.0: 0.5, 4166.0: 0.5, 4173.0: 1.0, 4172.0: 0.5, 4145.0: 0.5, 4163.0: 0.5, 4169.0: 0.5, 4225.0: 0.5, 4306.0: 0.5, 4297.0: 0.5, 4300.0: 0.5, 4299.0: 0.5, 4298.0: 0.5, 4295.0: 0.5, 4303.0: 0.5, 4312.0: 0, 4304.0: 0.5, 4305.0: 0.5, 4314.0: 0, 4308.0: 0.5, 4234.0: 0.5, 4231.0: 0.5, 4232.0: 0.5, 4233.0: 0.5, 4236.0: 0.5, 4228.0: 0.5, 4219.0: 0.5, 4220.0: 0.5, 4227.0: 0.5, 4226.0: 0.5, 4217.0: 0.5, 4223.0: 0.5, 4243.0: 0.5, 4324.0: 0.5, 4321.0: 0.5, 4348.0: 0, 4322.0: 0.5, 4323.0: 0.5, 4350.0: 0, 4326.0: 0.5, 4270.0: 0.5, 4267.0: 0.5, 4268.0: 0, 4269.0: 0.5, 4272.0: 0.5, 4246.0: 0.5, 4245.0: 0.5, 4244.0: 0.5, 4241.0: 0.5, 4249.0: 0.5, 4330.0: 0.5, 4329.0: 0.5, 4356.0: 0, 4338.0: 0, 4276.0: 0.5, 4275.0: 0.5, 4284.0: 0.5, 4258.0: 0.5, 4257.0: 0.5, 4250.0: 0.5, 4251.0: 0.5, 4332.0: 0.5, 4278.0: 0.5, 4260.0: 0.5, 4254.0: 0.5, 4090.0: 0.5, 1903.0: 0.5, 1930.0: 0.5, 1687.0: 0.5, 1696.0: 0, 1690.0: 0.5, 1681.0: 1.0, 1689.0: 0.5, 1698.0:

0, 1688.0: 0, 1921.0: 0.5, 1924.0: 0.5, 1923.0: 0.5, 1922.0: 0, 1927.0: 0.5, 1  
936.0: 0, 1928.0: 0, 1929.0: 0.5, 1938.0: 0, 1932.0: 0.5, 1912.0: 0, 1906.0:  
0.5, 1663.0: 0.5, 1672.0: 0, 1664.0: 0.5, 1637.0: 0.5, 1646.0: 0, 1655.0: 1.0,  
1879.0: 0.5, 1888.0: 0, 1880.0: 0.5, 1871.0: 0.5, 1897.0: 0.5, 1898.0: 0.5, 19  
05.0: 0.5, 1914.0: 0, 1904.0: 0.5, 1661.0: 0.5, 1670.0: 0, 1877.0: 0.5, 1886.  
0: 0, 1895.0: 0.5, 1901.0: 0.5, 1910.0: 0, 3847.0: 0.5, 3874.0: 0.5, 3865.0:  
1.0, 3871.0: 0.5, 3880.0: 0, 3872.0: 0, 3873.0: 0.5, 3882.0: 0, 3876.0: 0.5, 3  
867.0: 1.0, 3856.0: 0, 3850.0: 0.5, 3823.0: 0.5, 3832.0: 0, 3824.0: 0.5, 3815.  
0: 1.0, 3841.0: 1.0, 3849.0: 0.5, 3858.0: 0, 3848.0: 0.5, 3821.0: 0.5, 3830.0:  
0, 3839.0: 1.0, 3845.0: 0.5, 3854.0: 0, 4063.0: 0.5, 4072.0: 0, 4066.0: 0.5, 4  
057.0: 0.5, 4058.0: 0.5, 4065.0: 0.5, 4074.0: 0, 4064.0: 0.5, 4055.0: 0.5, 406  
1.0: 0.5, 4070.0: 0, 4081.0: 0.5, 4108.0: 0.5, 4105.0: 0.5, 4106.0: 0, 4107.0:  
0.5, 4110.0: 0.5, 4084.0: 0.5, 4083.0: 0.5, 4082.0: 0.5, 4079.0: 0.5, 4087.0:  
0.5, 4114.0: 0.5, 4113.0: 0.5, 4122.0: 0, 4096.0: 0, 4088.0: 0.5, 4089.0: 0.5,  
4116.0: 0.5, 4098.0: 0, 4092.0: 0.5, 4036.0: 0.5, 1849.0: 0.5, 1858.0: 0.5, 16  
15.0: 0.5, 1618.0: 0.5, 1537.0: 0.5, 1538.0: 0, 1617.0: 0.5, 1616.0: 0, 1777.  
0: 0.5, 1780.0: 0.5, 1779.0: 1.0, 1778.0: 0, 1855.0: 0.5, 1856.0: 0, 1857.0:  
0.5, 1860.0: 0.5, 1852.0: 0.5, 1609.0: 0.5, 1610.0: 0, 1771.0: 0.5, 1772.0: 0,  
1843.0: 0.5, 1844.0: 0, 1851.0: 0.5, 1850.0: 0, 3793.0: 0.5, 3802.0: 0.5, 372  
1.0: 0.5, 3724.0: 0.5, 3723.0: 1.0, 3722.0: 0, 3799.0: 0.5, 3800.0: 0, 3801.0:  
0.5, 3804.0: 0.5, 3796.0: 0.5, 3715.0: 0.5, 3716.0: 0, 3787.0: 1.0, 3795.0: 0.  
5, 3794.0: 0, 3955.0: 0.5, 3964.0: 0.5, 3961.0: 0.5, 3962.0: 0, 3963.0: 1.0, 3  
958.0: 0.5, 3949.0: 0.5, 3950.0: 0, 3957.0: 1.0, 3956.0: 0, 4027.0: 0.5, 4030.  
0: 0.5, 4029.0: 0.5, 4028.0: 0, 4033.0: 0.5, 4042.0: 0.5, 4041.0: 0.5, 4034.0:  
0, 4035.0: 0.5, 4044.0: 0.5, 4038.0: 0.5, 4018.0: 0.5, 1831.0: 0.5, 1834.0: 0.  
5, 1591.0: 0.5, 1592.0: 0, 1753.0: 0.5, 1754.0: 0, 1807.0: 0.5, 1808.0: 0, 183  
3.0: 0.5, 1832.0: 0.5, 1589.0: 0.5, 1751.0: 0.5, 1805.0: 0.5, 1829.0: 0.5, 377  
5.0: 0.5, 3778.0: 0.5, 3697.0: 0.5, 3698.0: 0, 3751.0: 0.5, 3752.0: 0, 3777.0:  
0.5, 3776.0: 0.5, 3695.0: 0.5, 3749.0: 0.5, 3773.0: 0.5, 3937.0: 0.5, 3940.0:  
0.5, 3913.0: 0.5, 3914.0: 0, 3939.0: 1.0, 3938.0: 0.5, 3911.0: 0.5, 3935.0: 0.  
5, 3991.0: 0.5, 3994.0: 0.5, 3993.0: 0.5, 3992.0: 0.5, 3989.0: 0.5, 4015.0: 0.  
5, 4016.0: 0.5, 4017.0: 0.5, 4020.0: 0.5, 4012.0: 0.5, 1825.0: 0.5, 1826.0: 0.  
5, 1583.0: 0.5, 1745.0: 0.5, 1799.0: 0.5, 1817.0: 0.5, 3769.0: 0.5, 3770.0: 0.  
5, 3689.0: 0.5, 3743.0: 0.5, 3761.0: 1.0, 3931.0: 0.5, 3932.0: 0.5, 3905.0: 0.  
5, 3923.0: 0.5, 3985.0: 0.5, 3986.0: 0.5, 3977.0: 0.5, 4003.0: 0.5, 4004.0: 0.  
5, 4011.0: 0.5, 4010.0: 0.5, 1823.0: 0.5, 3767.0: 0.5, 3929.0: 0.5, 3983.0: 0.  
5, 4001.0: 0.5, 4007.0: 0.5, 8383.0: 0.5, 8626.0: 0.5, 8545.0: 0.5, 8572.0: 0.  
5, 8563.0: 0.5, 8566.0: 0.5, 8565.0: 0.5, 8564.0: 0, 8569.0: 1.0, 8571.0: 0.5,  
8580.0: 0.5, 8577.0: 1.0, 8574.0: 0.5, 8554.0: 0.5, 8527.0: 0.5, 8530.0: 0.5,  
8529.0: 0.5, 8528.0: 0.5, 8525.0: 1.0, 8551.0: 1.0, 8553.0: 0.5, 8556.0: 0.5,  
8548.0: 0.5, 8521.0: 0.5, 8522.0: 0.5, 8513.0: 0.5, 8539.0: 0.5, 8540.0: 0.5,  
8547.0: 0.5, 8546.0: 0.5, 8519.0: 0.5, 8537.0: 0.5, 8543.0: 1.0, 8599.0: 0.5,  
8680.0: 0.5, 8671.0: 0.5, 8674.0: 0.5, 8673.0: 0.5, 8672.0: 0.5, 8669.0: 0.5,  
8677.0: 0.5, 8686.0: 0, 8678.0: 0.5, 8679.0: 0.5, 8688.0: 0, 8682.0: 0.5, 860  
8.0: 0.5, 8605.0: 0.5, 8606.0: 0.5, 8607.0: 0.5, 8610.0: 0.5, 8602.0: 0.5, 859  
3.0: 0.5, 8594.0: 0.5, 8601.0: 0.5, 8600.0: 0.5, 8591.0: 0.5, 8597.0: 0.5, 861  
7.0: 0.5, 8698.0: 0.5, 8695.0: 0.5, 8722.0: 0, 8696.0: 0.5, 8697.0: 0.5, 8724.  
0: 0, 8700.0: 0.5, 8644.0: 0.5, 8641.0: 0.5, 8642.0: 0, 8643.0: 0.5, 8646.0:  
0.5, 8620.0: 0.5, 8619.0: 0.5, 8618.0: 0.5, 8615.0: 0.5, 8623.0: 0.5, 8704.0:  
0.5, 8703.0: 0.5, 8730.0: 0, 8712.0: 0, 8650.0: 0.5, 8649.0: 0.5, 8658.0: 0.5,  
8632.0: 0.5, 8631.0: 0.5, 8624.0: 0.5, 8625.0: 0.5, 8706.0: 0.5, 8652.0: 0.5,  
8634.0: 0.5, 8628.0: 0.5, 8464.0: 0.5, 8221.0: 0.5, 8248.0: 0.5, 8239.0: 0.5,  
8242.0: 0.5, 8241.0: 0.5, 8240.0: 0, 8245.0: 0.5, 8254.0: 0, 8246.0: 0, 8247.  
0: 0.5, 8256.0: 0, 8250.0: 0.5, 8230.0: 0, 8224.0: 0.5, 8197.0: 0.5, 8206.0:  
0, 8198.0: 0.5, 8189.0: 0.5, 8215.0: 0.5, 8216.0: 0.5, 8223.0: 0.5, 8232.0: 0,  
8222.0: 0.5, 8195.0: 0.5, 8204.0: 0, 8213.0: 0.5, 8219.0: 0.5, 8228.0: 0, 843  
7.0: 0.5, 8446.0: 0, 8440.0: 0.5, 8431.0: 0.5, 8432.0: 0.5, 8439.0: 0.5, 8448.  
0: 0, 8438.0: 0.5, 8429.0: 0.5, 8435.0: 0.5, 8444.0: 0, 8455.0: 0.5, 8482.0:  
0.5, 8479.0: 0.5, 8480.0: 0, 8481.0: 0.5, 8484.0: 0.5, 8458.0: 0.5, 8457.0: 0.  
5, 8456.0: 0.5, 8453.0: 0.5, 8461.0: 0.5, 8488.0: 0.5, 8487.0: 0.5, 8496.0: 0,

8470.0: 0, 8462.0: 0.5, 8463.0: 0.5, 8490.0: 0.5, 8472.0: 0, 8466.0: 0.5, 841  
0.0: 0.5, 8167.0: 0.5, 8176.0: 0.5, 8095.0: 0.5, 8098.0: 0.5, 8097.0: 0.5, 809  
6.0: 0, 8173.0: 0.5, 8174.0: 0, 8175.0: 0.5, 8178.0: 0.5, 8170.0: 0.5, 8089.0:  
0.5, 8090.0: 0, 8161.0: 0.5, 8162.0: 0, 8169.0: 0.5, 8168.0: 0, 8329.0: 0.5, 8  
338.0: 0.5, 8335.0: 1.0, 8337.0: 0.5, 8340.0: 0.5, 8332.0: 0.5, 8323.0: 0.5, 8  
324.0: 0, 8331.0: 0.5, 8330.0: 0, 8401.0: 0.5, 8404.0: 0.5, 8403.0: 0.5, 8402.  
0: 0, 8407.0: 0.5, 8416.0: 0.5, 8415.0: 0.5, 8408.0: 0, 8409.0: 0.5, 8418.0:  
0.5, 8412.0: 0.5, 8392.0: 0.5, 8149.0: 0.5, 8152.0: 0.5, 8071.0: 0.5, 8072.0:  
0, 8125.0: 0.5, 8126.0: 0, 8151.0: 0.5, 8150.0: 0.5, 8069.0: 0.5, 8123.0: 0.5,  
8147.0: 0.5, 8311.0: 0.5, 8314.0: 0.5, 8287.0: 0.5, 8288.0: 0, 8313.0: 0.5, 83  
12.0: 0.5, 8285.0: 0.5, 8309.0: 1.0, 8365.0: 0.5, 8368.0: 0.5, 8367.0: 0.5, 83  
66.0: 0.5, 8363.0: 0.5, 8389.0: 0.5, 8390.0: 0.5, 8391.0: 0.5, 8394.0: 0.5, 83  
86.0: 0.5, 8143.0: 0.5, 8144.0: 0.5, 8063.0: 0.5, 8117.0: 0.5, 8135.0: 0.5, 83  
05.0: 0.5, 8306.0: 0.5, 8279.0: 0.5, 8297.0: 0.5, 8359.0: 0.5, 8360.0: 0.5, 83  
51.0: 0.5, 8377.0: 0.5, 8378.0: 0.5, 8385.0: 0.5, 8384.0: 0.5, 8141.0: 0.5, 83  
03.0: 0.5, 8357.0: 0.5, 8375.0: 0.5, 8381.0: 0.5, 10327.0: 0.5, 10408.0: 0.5,  
10381.0: 0.5, 10390.0: 0, 10384.0: 0.5, 10375.0: 0.5, 10376.0: 0.5, 10383.0:  
0.5, 10392.0: 0, 10382.0: 0.5, 10373.0: 0.5, 10379.0: 0.5, 10388.0: 0, 10399.  
0: 0.5, 10426.0: 0.5, 10423.0: 0.5, 10424.0: 0, 10425.0: 0.5, 10428.0: 0.5, 10  
402.0: 0.5, 10401.0: 0.5, 10400.0: 0.5, 10397.0: 0.5, 10405.0: 0.5, 10432.0:  
0.5, 10431.0: 0.5, 10440.0: 0, 10414.0: 0, 10406.0: 0.5, 10407.0: 0.5, 10434.  
0: 0.5, 10416.0: 0, 10410.0: 0.5, 10354.0: 0.5, 10273.0: 0.5, 10282.0: 0.5, 10  
279.0: 0.5, 10280.0: 0, 10281.0: 0.5, 10284.0: 0.5, 10276.0: 0.5, 10267.0: 0.  
5, 10268.0: 0, 10275.0: 0.5, 10274.0: 0, 10345.0: 0.5, 10348.0: 0.5, 10347.0:  
0.5, 10346.0: 0, 10351.0: 0.5, 10360.0: 0.5, 10359.0: 0.5, 10352.0: 0, 10353.  
0: 0.5, 10362.0: 0.5, 10356.0: 0.5, 10336.0: 0.5, 10255.0: 0.5, 10258.0: 0.5,  
10231.0: 1.0, 10257.0: 0.5, 10256.0: 0.5, 10229.0: 1.0, 10253.0: 0.5, 10309.0:  
0.5, 10312.0: 0.5, 10311.0: 0.5, 10310.0: 0.5, 10307.0: 0.5, 10333.0: 0.5, 103  
34.0: 0.5, 10335.0: 0.5, 10338.0: 0.5, 10330.0: 0.5, 10249.0: 0.5, 10250.0: 0.  
5, 10223.0: 1.0, 10241.0: 0.5, 10303.0: 0.5, 10304.0: 0.5, 10295.0: 0.5, 1032  
1.0: 0.5, 10322.0: 0.5, 10329.0: 0.5, 10328.0: 0.5, 10247.0: 0.5, 10301.0: 0.  
5, 10319.0: 0.5, 10325.0: 0.5, 10489.0: 0.5, 10732.0: 0.5, 10705.0: 0.5, 1071  
4.0: 0.5, 10711.0: 0.5, 10712.0: 0.5, 10713.0: 0.5, 10716.0: 0.5, 10708.0: 0.  
5, 10699.0: 0.5, 10700.0: 0.5, 10707.0: 0.5, 10706.0: 0.5, 10697.0: 0.5, 1070  
3.0: 0.5, 10723.0: 0.5, 10750.0: 0.5, 10747.0: 0.5, 10748.0: 0, 10749.0: 0.5,  
10752.0: 0.5, 10726.0: 0.5, 10725.0: 0.5, 10724.0: 0.5, 10721.0: 0.5, 10729.0:  
0.5, 10756.0: 0.5, 10755.0: 0.5, 10764.0: 0.5, 10738.0: 0.5, 10737.0: 0.5, 107  
30.0: 0.5, 10731.0: 0.5, 10758.0: 0.5, 10740.0: 0.5, 10734.0: 0.5, 10516.0: 0.  
495, 10507.0: 0.5, 10510.0: 0.5, 10509.0: 0.5, 10508.0: 0, 10513.0: 0.45, 1052  
2.0: 0.5, 10521.0: 0.5, 10514.0: 0, 10515.0: 0.5, 10524.0: 0.5, 10518.0: 0.5,  
10498.0: 0.5, 10471.0: 0.5, 10474.0: 0.5, 10473.0: 0.5, 10472.0: 0.5, 10469.0:  
0.5, 10495.0: 0.5, 10496.0: 0.5, 10497.0: 0.5, 10500.0: 0.5, 10492.0: 0.5, 104  
65.0: 0.5, 10466.0: 0.5, 10457.0: 0.5, 10483.0: 0.5, 10484.0: 0.5, 10491.0: 0.  
5, 10490.0: 0.5, 10463.0: 0.5, 10481.0: 0.5, 10487.0: 0.5, 10543.0: 0.5, 1078  
6.0: 0.5, 10777.0: 0.5, 10858.0: 0.5, 10855.0: 0.5, 10856.0: 0.5, 10857.0: 0.  
5, 10860.0: 0.5, 10780.0: 0.5, 10779.0: 0.5, 10778.0: 0.5, 10775.0: 0.5, 1078  
3.0: 0.5, 10864.0: 0.5, 10863.0: 0.5, 10872.0: 0, 10792.0: 0.5, 10791.0: 0.5,  
10784.0: 0.5, 10785.0: 0.5, 10866.0: 0.5, 10794.0: 0.5, 10788.0: 0.5, 10624.0:  
0.5, 10615.0: 0.5, 10618.0: 0.5, 10617.0: 0.5, 10616.0: 0.5, 10613.0: 0.5, 106  
21.0: 0.5, 10630.0: 0, 10622.0: 0.5, 10623.0: 0.5, 10632.0: 0, 10626.0: 0.5, 1  
0552.0: 0.5, 10549.0: 0.5, 10550.0: 0.5, 10551.0: 0.5, 10554.0: 0.5, 10546.0:  
0.5, 10537.0: 0.5, 10538.0: 0.5, 10545.0: 0.5, 10544.0: 0.5, 10535.0: 0.5, 105  
41.0: 0.5, 10561.0: 0.5, 10804.0: 0.5, 10801.0: 0.5, 10882.0: 0.5, 10881.0: 1.  
0, 10828.0: 0.5, 10827.0: 1.0, 10802.0: 0.5, 10803.0: 0.5, 10884.0: 0.5, 1083  
0.0: 0.5, 10806.0: 0.5, 10642.0: 0.5, 10639.0: 0.5, 10666.0: 0.5, 10665.0: 1.  
0, 10640.0: 0.5, 10641.0: 0.5, 10668.0: 0.5, 10644.0: 0.5, 10588.0: 0.5, 1058  
5.0: 0.5, 10586.0: 0, 10587.0: 0.5, 10590.0: 0.5, 10564.0: 0.5, 10563.0: 0.5,  
10562.0: 0.5, 10559.0: 0.5, 10567.0: 0.5, 10810.0: 0.5, 10809.0: 0.5, 10890.0:  
0.5, 10836.0: 0.5, 10818.0: 0.5, 10648.0: 0.5, 10647.0: 0.5, 10674.0: 0.5, 106  
56.0: 0, 10594.0: 0.5, 10593.0: 0.5, 10602.0: 0.5, 10576.0: 0.5, 10575.0: 0.5,

10568.0: 0.5, 10569.0: 0.5, 10812.0: 0.5, 10650.0: 0.5, 10596.0: 0.5, 10578.0:  
0.5, 10572.0: 0.5, 10084.0: 0.5, 3523.0: 0.5, 3604.0: 0.5, 1417.0: 0.5, 1444.  
0: 0, 1426.0: 0.5, 697.0: 1.0, 1399.0: 0.5, 1402.0: 0.5, 673.0: 1.0, 1401.0:  
0.5, 1400.0: 0.5, 671.0: 1.0, 1397.0: 0.5, 1423.0: 0.5, 1450.0: 0, 1424.0: 0.  
5, 695.0: 1.0, 1425.0: 0.5, 1452.0: 0, 1428.0: 0.5, 699.0: 1.0, 1420.0: 0.5, 6  
91.0: 1.0, 1393.0: 0.5, 1394.0: 0.5, 665.0: 1.0, 1385.0: 0.5, 1411.0: 0.5, 143  
8.0: 0, 1412.0: 0.5, 683.0: 1.0, 1419.0: 0.5, 1446.0: 0, 1418.0: 0.5, 689.0:  
1.0, 1391.0: 0.5, 1409.0: 0.5, 1436.0: 0, 1415.0: 0.5, 1442.0: 0, 2875.0: 0.5,  
2902.0: 0, 2884.0: 0.5, 2857.0: 0.5, 2860.0: 0.5, 2859.0: 1.0, 2858.0: 0.5, 28  
55.0: 0.5, 2881.0: 0.5, 2908.0: 0, 2882.0: 0.5, 2883.0: 0.5, 2910.0: 0, 2886.  
0: 0.5, 2878.0: 0.5, 2851.0: 0.5, 2852.0: 0.5, 2843.0: 0.5, 2869.0: 0.5, 2896.  
0: 0, 2870.0: 0.5, 2877.0: 0.5, 2904.0: 0, 2876.0: 0.5, 2849.0: 0.5, 2867.0:  
0.5, 2894.0: 0, 2873.0: 0.5, 2900.0: 0, 3577.0: 0.5, 3586.0: 0.5, 3583.0: 0.5,  
3584.0: 0.5, 3585.0: 0.5, 3588.0: 0.5, 3580.0: 0.5, 3571.0: 0.5, 3572.0: 0.5,  
3579.0: 0.5, 3578.0: 0.5, 3569.0: 0.5, 3575.0: 0.5, 3595.0: 0.5, 3622.0: 0, 35  
98.0: 0.5, 3597.0: 0.5, 3624.0: 0, 3596.0: 0.5, 3593.0: 0.5, 3620.0: 0, 3601.  
0: 0.5, 3628.0: 0, 3610.0: 0.5, 3609.0: 0.5, 3636.0: 0, 3602.0: 0.5, 3603.0:  
0.5, 3630.0: 0, 3612.0: 0.5, 3606.0: 0.5, 3550.0: 0.5, 1363.0: 0.5, 1372.0: 0.  
5, 643.0: 1.0, 1291.0: 0.5, 1294.0: 0.5, 565.0: 1.0, 1293.0: 1.0, 1292.0: 0.5,  
563.0: 1.0, 1289.0: 1.0, 1369.0: 0.5, 1370.0: 0.5, 641.0: 1.0, 1371.0: 0.5, 13  
74.0: 0.5, 645.0: 1.0, 1366.0: 0.5, 637.0: 1.0, 1285.0: 0.5, 1286.0: 0.5, 557.  
0: 1.0, 1277.0: 0.5, 1357.0: 0.5, 1358.0: 0.5, 629.0: 1.0, 1365.0: 0.5, 1364.  
0: 0.5, 635.0: 1.0, 1283.0: 0.5, 1355.0: 0.5, 1361.0: 0.5, 2821.0: 0.5, 2830.  
0: 0.5, 2749.0: 0.5, 2752.0: 0.5, 2751.0: 1.0, 2750.0: 0.5, 2747.0: 0.5, 2827.  
0: 0.5, 2828.0: 0.5, 2829.0: 0.5, 2832.0: 0.5, 2824.0: 0.5, 2743.0: 0.5, 2744.  
0: 0.5, 2735.0: 1.0, 2815.0: 0.5, 2816.0: 0.5, 2823.0: 0.5, 2822.0: 0.5, 2741.  
0: 0.5, 2813.0: 0.5, 2819.0: 0.5, 3469.0: 0.5, 3478.0: 0.5, 3475.0: 0.5, 3476.  
0: 0.5, 3477.0: 1.0, 3472.0: 0.5, 3463.0: 0.5, 3464.0: 0.5, 3471.0: 1.0, 3470.  
0: 0.5, 3461.0: 0.5, 3467.0: 0.5, 3541.0: 0.5, 3544.0: 0.5, 3543.0: 0.5, 3542.  
0: 0.5, 3539.0: 0.5, 3547.0: 0.5, 3556.0: 0.5, 3555.0: 0.5, 3548.0: 0.5, 3549.  
0: 0.5, 3558.0: 0.5, 3552.0: 0.5, 3532.0: 0.5, 1345.0: 0.5, 1348.0: 0.5, 619.  
0: 1.0, 1267.0: 0.5, 1268.0: 0, 1321.0: 0.5, 1322.0: 0, 1347.0: 0.5, 1346.0:  
0.5, 617.0: 1.0, 1265.0: 0.5, 1319.0: 0.5, 1343.0: 0.5, 2803.0: 0.5, 2806.0:  
0.5, 2725.0: 0.5, 2726.0: 0, 2779.0: 0.5, 2780.0: 0, 2805.0: 0.5, 2804.0: 0.5,  
2723.0: 0.5, 2777.0: 0.5, 2801.0: 0.5, 3451.0: 0.5, 3454.0: 0.5, 3427.0: 0.5,  
3428.0: 0, 3453.0: 1.0, 3452.0: 0.5, 3425.0: 0.5, 3449.0: 0.5, 3505.0: 0.5, 35  
08.0: 0.5, 3507.0: 0.5, 3506.0: 0.5, 3503.0: 0.5, 3529.0: 0.5, 3530.0: 0.5, 35  
31.0: 0.5, 3534.0: 0.5, 3526.0: 0.5, 1339.0: 0.5, 1340.0: 0.5, 611.0: 1.0, 125  
9.0: 0.5, 1313.0: 0.5, 1331.0: 0.5, 2797.0: 0.5, 2798.0: 0.5, 2717.0: 0.5, 277  
1.0: 0.5, 2789.0: 0.5, 3445.0: 0.5, 3446.0: 0.5, 3419.0: 0.5, 3437.0: 0.5, 349  
9.0: 0.5, 3500.0: 0.5, 3491.0: 0.5, 3517.0: 0.5, 3518.0: 0.5, 3525.0: 0.5, 352  
4.0: 0.5, 1337.0: 0.5, 2795.0: 0.5, 3443.0: 0.5, 3497.0: 0.5, 3515.0: 0.5, 352  
1.0: 0.5, 7897.0: 0.5, 7978.0: 0.5, 7249.0: 0.5, 7276.0: 0, 7258.0: 0.5, 7231.  
0: 0.5, 7234.0: 0.5, 7233.0: 1.0, 7232.0: 0.5, 7229.0: 0.5, 13790.0: 0, 7255.  
0: 0.5, 7282.0: 0, 7256.0: 0.5, 7257.0: 0.5, 7284.0: 0, 7260.0: 0.5, 7252.0:  
0.5, 7225.0: 0.5, 7226.0: 0.5, 7217.0: 0.5, 7243.0: 0.5, 7270.0: 0, 7244.0: 0.  
5, 7251.0: 0.5, 7278.0: 0, 7250.0: 0.5, 7223.0: 0.5, 7241.0: 0.5, 7268.0: 0, 7  
247.0: 0.5, 7274.0: 0, 7951.0: 0.5, 7960.0: 0.5, 7957.0: 0.5, 7958.0: 0.5, 795  
9.0: 0.5, 7962.0: 0.5, 7954.0: 0.5, 7945.0: 0.5, 7946.0: 0.5, 7953.0: 0.5, 795  
2.0: 0.5, 7943.0: 0.5, 7949.0: 0.5, 7969.0: 0.5, 7996.0: 0, 7972.0: 0.5, 7971.  
0: 0.5, 7998.0: 0, 7970.0: 0.5, 7967.0: 0.5, 7994.0: 0, 7975.0: 0.5, 8002.0:  
0, 7984.0: 0.5, 7983.0: 0.5, 8010.0: 0, 7976.0: 0.5, 7977.0: 0.5, 8004.0: 0, 7  
986.0: 0.5, 7980.0: 0.5, 7924.0: 0.5, 7195.0: 0.5, 7204.0: 0.5, 7123.0: 0.5, 7  
126.0: 0.5, 7125.0: 0.5, 7124.0: 0.5, 7121.0: 1.0, 7201.0: 0.5, 7202.0: 0.5, 7  
203.0: 0.5, 7206.0: 0.5, 7198.0: 0.5, 7117.0: 0.5, 7118.0: 0.5, 7109.0: 1.0, 7  
189.0: 0.5, 7190.0: 0.5, 7197.0: 0.5, 7196.0: 0.5, 7115.0: 0.5, 7187.0: 0.5, 7  
193.0: 0.5, 7843.0: 0.5, 7852.0: 0.5, 7849.0: 1.0, 7851.0: 0.5, 7854.0: 0.5, 7  
846.0: 0.5, 7837.0: 0.5, 7838.0: 0.5, 7845.0: 0.5, 7844.0: 0.5, 7835.0: 0.5, 7  
841.0: 1.0, 7915.0: 0.5, 7918.0: 0.5, 7917.0: 0.5, 7916.0: 0.5, 7913.0: 0.5, 7  
921.0: 0.5, 7930.0: 0.5, 7929.0: 0.5, 7922.0: 0.5, 7923.0: 0.5, 7932.0: 0.5, 7

926.0: 0.5, 7906.0: 0.5, 7177.0: 0.5, 7180.0: 0.5, 7099.0: 0.5, 7100.0: 0, 715  
3.0: 0.5, 7154.0: 0, 7179.0: 0.5, 7178.0: 0.5, 7097.0: 0.5, 7151.0: 0.5, 7175.  
0: 0.5, 7825.0: 0.5, 7828.0: 0.5, 7801.0: 0.5, 7802.0: 0, 7827.0: 0.5, 7826.0:  
0.5, 7799.0: 0.5, 7823.0: 1.0, 7879.0: 0.5, 7882.0: 0.5, 7881.0: 0.5, 7880.0:  
0.5, 7877.0: 0.5, 7903.0: 0.5, 7904.0: 0.5, 7905.0: 0.5, 7908.0: 0.5, 7900.0:  
0.5, 7171.0: 0.5, 7172.0: 0.5, 7091.0: 0.5, 7145.0: 0.5, 7163.0: 0.5, 7819.0:  
0.5, 7820.0: 0.5, 7793.0: 0.5, 7811.0: 0.5, 7873.0: 0.5, 7874.0: 0.5, 7865.0:  
0.5, 7891.0: 0.5, 7892.0: 0.5, 7899.0: 0.5, 7898.0: 0.5, 7169.0: 0.5, 7817.0:  
0.5, 7871.0: 0.5, 7889.0: 0.5, 7895.0: 0.5, 9355.0: 0.5, 9436.0: 0.5, 9409.0:  
0.5, 9418.0: 0.5, 9415.0: 0.5, 9416.0: 0.5, 9417.0: 1.0, 9412.0: 0.5, 9403.0:  
0.5, 9404.0: 0.5, 9411.0: 1.0, 9410.0: 0.5, 9401.0: 0.5, 9407.0: 0.5, 9427.0:  
0.5, 9454.0: 0, 9430.0: 0.5, 9429.0: 0.5, 9456.0: 0, 9428.0: 0.5, 9425.0: 0.5,  
9452.0: 0, 9433.0: 0.5, 9460.0: 0, 9442.0: 0.5, 9441.0: 0.5, 9468.0: 0, 9434.  
0: 0.5, 9435.0: 0.5, 9462.0: 0, 9444.0: 0.5, 9438.0: 0.5, 9382.0: 0.495, 9301.  
0: 0.505, 9310.0: 0.5, 9307.0: 0.5, 9308.0: 0.5, 9309.0: 0.5, 9312.0: 0.5, 930  
4.0: 0.55, 9295.0: 1.0, 9303.0: 0.5, 9302.0: 0.5, 9293.0: 1.0, 9299.0: 0.5, 93  
73.0: 0.5, 9376.0: 0.5, 9375.0: 0.5, 9374.0: 0.5, 9371.0: 0.5, 9379.0: 0.45, 9  
388.0: 0.5, 9387.0: 0.5, 9380.0: 0.5, 9381.0: 0.5, 9390.0: 0.5, 9384.0: 0.5, 9  
364.0: 0.5, 9283.0: 0.5, 9286.0: 0.5, 9259.0: 0.5, 9260.0: 0, 9285.0: 0.5, 928  
4.0: 0.5, 9257.0: 0.5, 9281.0: 0.5, 9337.0: 0.5, 9340.0: 0.5, 9339.0: 1.0, 933  
8.0: 0.5, 9335.0: 0.5, 9361.0: 0.5, 9362.0: 0.5, 9363.0: 0.5, 9366.0: 0.5, 935  
8.0: 0.5, 9277.0: 0.5, 9278.0: 0.5, 9251.0: 0.5, 9269.0: 1.0, 9331.0: 0.5, 933  
2.0: 0.5, 9323.0: 0.5, 9349.0: 0.5, 9350.0: 0.5, 9357.0: 0.5, 9356.0: 0.5, 927  
5.0: 0.5, 9329.0: 0.5, 9347.0: 0.5, 9353.0: 0.5, 10003.0: 0.5, 10030.0: 0.500  
5, 10021.0: 0.5, 10024.0: 0.5, 10023.0: 0.5, 10022.0: 0.5, 10019.0: 0.5, 1002  
7.0: 0.5, 10036.0: 0.5, 10035.0: 0.5, 10028.0: 0.5, 10029.0: 0.5, 10038.0: 0.  
5, 10032.0: 0.5, 10012.0: 0.5, 9985.0: 0.5, 9988.0: 0.5, 9987.0: 0.5, 9986.0:  
0.5, 9983.0: 0.5, 10009.0: 0.5, 10010.0: 0.5, 10011.0: 0.5, 10014.0: 0.5, 1000  
6.0: 0.5, 9979.0: 0.5, 9980.0: 0.5, 9971.0: 0.5, 9997.0: 0.5, 9998.0: 0.5, 100  
05.0: 0.5, 10004.0: 0.5, 9977.0: 0.5, 9995.0: 0.5, 10001.0: 0.5, 10057.0: 0.5,  
10138.0: 0.5, 10129.0: 0.5, 10132.0: 0.5, 10131.0: 0.5, 10130.0: 0.5, 10127.0:  
0.5, 10135.0: 0.5, 10144.0: 0.5, 10143.0: 0.5, 10136.0: 0.5, 10137.0: 0.5, 101  
46.0: 0.5, 10140.0: 0.5, 10066.0: 0.5, 10063.0: 0.5, 10064.0: 0.5, 10065.0: 0.  
5, 10068.0: 0.5, 10060.0: 0.5, 10051.0: 0.5, 10052.0: 0.5, 10059.0: 0.5, 1005  
8.0: 0.5, 10049.0: 0.5, 10055.0: 0.5, 10075.0: 0.5, 10156.0: 0.5, 10153.0: 0.  
5, 10180.0: 0, 10154.0: 0.5, 10155.0: 0.5, 10182.0: 0, 10158.0: 0.5, 10102.0:  
0.5, 10099.0: 0.5, 10100.0: 0.5, 10101.0: 0.5, 10104.0: 0.5, 10078.0: 0.5, 100  
77.0: 0.5, 10076.0: 0.5, 10073.0: 0.5, 10081.0: 0.5, 10162.0: 0.5, 10161.0: 0.  
5, 10188.0: 0, 10170.0: 0.5, 10108.0: 0.5, 10107.0: 0.45, 10116.0: 0.5, 10090.  
0: 0.5, 10089.0: 0.5, 10082.0: 0.5, 10083.0: 0.5, 10164.0: 0.5, 10110.0: 0.49  
5, 10092.0: 0.5, 10086.0: 0.5, 9922.0: 0.5, 3361.0: 0.5, 3388.0: 0.5, 1201.0:  
0.5, 1210.0: 0.5, 481.0: 1.0, 967.0: 0.5, 970.0: 0.5, 241.0: 1.0, 969.0: 0.5,  
968.0: 0.5, 239.0: 1.0, 965.0: 0.5, 1694.0: 0, 1207.0: 0.5, 1208.0: 0.5, 479.  
0: 1.0, 1209.0: 0.5, 1212.0: 0.5, 483.0: 1.0, 1204.0: 0.5, 475.0: 1.0, 961.0:  
0.5, 962.0: 0.5, 233.0: 1.0, 953.0: 1.0, 1195.0: 0.5, 1196.0: 0.5, 467.0: 1.0,  
1203.0: 0.5, 1202.0: 0.5, 473.0: 1.0, 959.0: 0.5, 1193.0: 0.5, 1199.0: 0.5, 26  
59.0: 0.5, 2668.0: 0.5, 2425.0: 0.5, 2428.0: 0.5, 2427.0: 0.5, 2426.0: 0.5, 24  
23.0: 0.5, 2665.0: 0.5, 2666.0: 0.5, 2667.0: 0.5, 2670.0: 0.5, 2662.0: 0.5, 24  
19.0: 0.5, 2420.0: 0.5, 2411.0: 1.0, 2653.0: 0.5, 2654.0: 0.5, 2661.0: 0.5, 26  
60.0: 0.5, 2417.0: 0.5, 2651.0: 0.5, 2657.0: 0.5, 3145.0: 0.5, 3154.0: 0.5, 31  
51.0: 0.5, 3152.0: 0.5, 3153.0: 0.5, 3156.0: 0.5, 3148.0: 0.5, 3139.0: 1.0, 31  
47.0: 0.5, 3146.0: 0.5, 3137.0: 1.0, 3143.0: 0.5, 3379.0: 0.5, 3382.0: 0.5, 33  
81.0: 0.5, 3380.0: 0.5, 3377.0: 0.5, 3385.0: 0.5, 3394.0: 0.5, 3393.0: 0.5, 33  
86.0: 0.5, 3387.0: 0.5, 3396.0: 0.5, 3390.0: 0.5, 3370.0: 0.5, 1183.0: 0.5, 11  
86.0: 0.5, 457.0: 1.0, 943.0: 0.5, 944.0: 0, 1159.0: 0.5, 1160.0: 0, 1185.0:  
0.5, 1184.0: 0.5, 455.0: 1.0, 941.0: 0.5, 1157.0: 0.5, 1181.0: 0.5, 2641.0: 0.  
5, 2644.0: 0.5, 2401.0: 0.5, 2402.0: 0, 2617.0: 0.5, 2618.0: 0, 2643.0: 0.5, 2  
642.0: 0.5, 2399.0: 0.5, 2615.0: 0.5, 2639.0: 0.5, 3127.0: 0.5, 3130.0: 0.5, 3  
103.0: 0.5, 3104.0: 0, 3129.0: 0.5, 3128.0: 0.5, 3101.0: 0.5, 3125.0: 0.5, 334  
3.0: 0.5, 3346.0: 0.5, 3345.0: 0.5, 3344.0: 0.5, 3341.0: 0.5, 3367.0: 0.5, 336

8.0: 0.5, 3369.0: 0.5, 3372.0: 0.5, 3364.0: 0.5, 1177.0: 0.5, 1178.0: 0.5, 44  
9.0: 1.0, 935.0: 0.5, 1151.0: 0.5, 1169.0: 0.5, 2635.0: 0.5, 2636.0: 0.5, 239  
3.0: 0.5, 2609.0: 0.5, 2627.0: 0.5, 3121.0: 0.5, 3122.0: 0.5, 3095.0: 0.5, 3113  
3329.0: 0.5, 3355.0: 0.5, 3356.0: 0.5, 3363.0: 0.5, 3362.0: 0.5, 1175.0: 0.5,  
2633.0: 0.5, 3119.0: 0.5, 3335.0: 0.5, 3353.0: 0.5, 3359.0: 0.5, 7735.0: 0.5,  
7762.0: 0.5, 7033.0: 0.5, 7042.0: 0.5, 6799.0: 0.5, 6802.0: 0.5, 6801.0: 0.5,  
6800.0: 0.5, 6797.0: 0.5, 7039.0: 0.5, 7040.0: 0.5, 7041.0: 0.5, 7044.0: 0.5,  
7036.0: 0.5, 6793.0: 0.5, 6794.0: 0.5, 6785.0: 0.5, 7027.0: 0.5, 7028.0: 0.5,  
7035.0: 0.5, 7034.0: 0.5, 6791.0: 0.5, 7025.0: 0.5, 7031.0: 0.5, 7519.0: 0.5,  
7528.0: 0.5, 7525.0: 0.5, 7526.0: 0.5, 7527.0: 0.5, 7530.0: 0.5, 7522.0: 0.5,  
7513.0: 0.5, 7514.0: 0.5, 7521.0: 0.5, 7520.0: 0.5, 7511.0: 0.5, 7517.0: 0.5,  
7753.0: 0.5, 7756.0: 0.5, 7755.0: 0.5, 7754.0: 0.5, 7751.0: 0.5, 7759.0: 0.5,  
7768.0: 0.5, 7767.0: 0.5, 7760.0: 0.5, 7761.0: 0.5, 7770.0: 0.5, 7764.0: 0.5,  
7744.0: 0.5, 7015.0: 0.5, 7018.0: 0.5, 6775.0: 0.5, 6776.0: 0, 6991.0: 0.5, 69  
92.0: 0, 7017.0: 0.5, 7016.0: 0.5, 6773.0: 0.5, 6989.0: 0.5, 7013.0: 0.5, 750  
1.0: 0.5, 7504.0: 0.5, 7477.0: 0.5, 7478.0: 0, 7503.0: 0.5, 7502.0: 0.5, 7475.  
0: 0.5, 7499.0: 0.5, 7717.0: 0.5, 7720.0: 0.5, 7719.0: 0.5, 7718.0: 0.5, 7715.  
0: 0.5, 7741.0: 0.5, 7742.0: 0.5, 7743.0: 0.5, 7746.0: 0.5, 7738.0: 0.5, 7009.  
0: 0.5, 7010.0: 0.5, 6767.0: 0.5, 6983.0: 0.5, 7001.0: 0.5, 7495.0: 0.5, 7496.  
0: 0.5, 7469.0: 0.5, 7487.0: 0.5, 7711.0: 0.5, 7712.0: 0.5, 7703.0: 0.5, 7729.  
0: 0.5, 7730.0: 0.5, 7737.0: 0.5, 7736.0: 0.5, 7007.0: 0.5, 7493.0: 0.5, 7709.  
0: 0.5, 7727.0: 0.5, 7733.0: 0.5, 9193.0: 0.5, 9220.0: 0.5, 8977.0: 0.5, 8986.  
0: 0.5, 8983.0: 0.5, 8984.0: 0.5, 8985.0: 0.5, 8988.0: 0.5, 8980.0: 0.5, 8971.  
0: 0.5, 8972.0: 0.5, 8979.0: 0.5, 8978.0: 0.5, 8969.0: 0.5, 8975.0: 0.5, 9211.  
0: 0.5, 9214.0: 0.5, 9213.0: 0.5, 9212.0: 0.5, 9209.0: 0.5, 9217.0: 0.5, 9226.  
0: 0.5, 9225.0: 0.5, 9218.0: 0.5, 9219.0: 0.5, 9228.0: 0.5, 9222.0: 0.5, 9202.  
0: 0.5, 8959.0: 0.5, 8962.0: 0.5, 8935.0: 0.5, 8936.0: 0, 8961.0: 0.5, 8960.0:  
0.5, 8933.0: 0.5, 8957.0: 0.5, 9175.0: 0.5, 9178.0: 0.5, 9177.0: 1.0, 9176.0:  
0.5, 9173.0: 0.5, 9199.0: 0.5, 9200.0: 0.5, 9201.0: 0.5, 9204.0: 0.5, 9196.0:  
0.5, 8953.0: 0.5, 8954.0: 0.5, 8927.0: 0.5, 8945.0: 0.5, 9169.0: 0.5, 9170.0:  
0.5, 9161.0: 0.5, 9187.0: 0.5, 9188.0: 0.5, 9195.0: 0.5, 9194.0: 0.5, 8951.0:  
0.5, 9167.0: 0.5, 9185.0: 0.5, 9191.0: 0.5, 9679.0: 0.5, 9706.0: 0.5, 9697.0:  
0.5, 9700.0: 0.5, 9699.0: 0.5, 9698.0: 0.5, 9695.0: 0.5, 9703.0: 0.5, 9712.0:  
0.5, 9711.0: 0.5, 9704.0: 0.5, 9705.0: 0.5, 9714.0: 0.5, 9708.0: 0.5, 9688.0:  
0.5, 9661.0: 0.5, 9664.0: 0.5, 9663.0: 0.5, 9662.0: 0.5, 9659.0: 0.5, 9685.0:  
0.5, 9686.0: 0.5, 9687.0: 0.5, 9690.0: 0.5, 9682.0: 0.5, 9655.0: 0.5, 9656.0:  
0.5, 9647.0: 0.5, 9673.0: 0.5, 9674.0: 0.5, 9681.0: 0.5, 9680.0: 0.5, 9653.0:  
0.5, 9671.0: 0.5, 9677.0: 0.5, 9895.0: 0.5, 9904.0: 0.5, 9901.0: 0.5, 9902.0:  
0.5, 9903.0: 0.5, 9906.0: 0.5, 9898.0: 0.5, 9889.0: 0.5, 9890.0: 0.5, 9897.0:  
0.5, 9896.0: 0.5, 9887.0: 0.5, 9893.0: 0.5, 9913.0: 0.5, 9940.0: 0.5, 9937.0:  
0.5, 9938.0: 0.5, 9939.0: 0.5, 9942.0: 0.5, 9916.0: 0.5, 9915.0: 0.5, 9914.0:  
0.5, 9911.0: 0.5, 9919.0: 0.5, 9946.0: 0.5, 9945.0: 0.5, 9954.0: 0.5, 9928.0:  
0.5, 9927.0: 0.5, 9920.0: 0.5, 9921.0: 0.5, 9948.0: 0.5, 9930.0: 0.5, 9924.0:  
0.5, 9868.0: 0.499836362929155, 3307.0: 0.4995, 3316.0: 0.5, 1129.0: 0.5, 113  
2.0: 0.5, 403.0: 1.0, 889.0: 0.5, 890.0: 0, 1051.0: 0.5, 1052.0: 0, 1131.0: 0.  
5, 1130.0: 0.5, 401.0: 1.0, 887.0: 0.5, 1049.0: 0.5, 1127.0: 0.5, 2587.0: 0.50  
5, 2590.0: 0.55, 2347.0: 0.5, 2348.0: 0, 2509.0: 0.5, 2510.0: 0, 2589.0: 0.5,  
2588.0: 0.5, 2345.0: 0.5, 2507.0: 0.5, 2585.0: 0.5, 3073.0: 0.5, 3076.0: 0.5,  
2995.0: 0.5, 2996.0: 0, 3075.0: 0.5, 3074.0: 0.5, 2993.0: 0.5, 3071.0: 0.5, 32  
35.0: 0.5, 3238.0: 0.5, 3237.0: 1.0, 3236.0: 0.5, 3233.0: 0.5, 3313.0: 0.5, 33  
14.0: 0.5, 3315.0: 0.5, 3318.0: 0.5, 3310.0: 0.5, 1123.0: 0.5, 1124.0: 0.5, 39  
5.0: 1.0, 881.0: 0.5, 1043.0: 0.5, 1115.0: 0.5, 2581.0: 0.5, 2582.0: 0.5, 233  
9.0: 0.5, 2501.0: 0.5, 2573.0: 0.5, 3067.0: 0.5, 3068.0: 0.5, 2987.0: 0.5, 305  
9.0: 1.0, 3229.0: 0.5, 3230.0: 0.5, 3221.0: 0.5, 3301.0: 0.5, 3302.0: 0.5, 330  
9.0: 0.5, 3308.0: 0.495, 1121.0: 0.5, 2579.0: 0.5, 3065.0: 0.5, 3227.0: 0.5, 3  
299.0: 0.5, 3305.0: 0.45, 7681.0: 0.5, 7690.0: 0.5, 6961.0: 0.5, 6964.0: 0.5,  
6721.0: 0.5, 6722.0: 0, 6883.0: 0.5, 6884.0: 0, 6963.0: 0.5, 6962.0: 0.5, 671  
9.0: 0.5, 6881.0: 0.5, 6959.0: 0.5, 7447.0: 0.5, 7450.0: 0.5, 7369.0: 0.5, 737  
0.0: 0, 7449.0: 0.5, 7448.0: 0.5, 7367.0: 0.5, 7445.0: 0.5, 7609.0: 0.5, 7612.  
0: 0.5, 7611.0: 0.5, 7610.0: 0.5, 7607.0: 1.0, 7687.0: 0.5, 7688.0: 0.5, 7689.



0: 0.5, 7692.0: 0.5, 7684.0: 0.5, 6955.0: 0.5, 6956.0: 0.5, 6713.0: 0.5, 6875.  
0: 0.5, 6947.0: 0.5, 7441.0: 0.5, 7442.0: 0.5, 7361.0: 0.5, 7433.0: 0.5, 7603.  
0: 0.5, 7604.0: 0.5, 7595.0: 0.5, 7675.0: 0.5, 7676.0: 0.5, 7683.0: 0.5, 7682.  
0: 0.5, 6953.0: 0.5, 7439.0: 0.5, 7601.0: 0.5, 7673.0: 0.5, 7679.0: 0.45, 913  
9.0: 0.4995780885, 9148.0: 0.50049955, 8905.0: 0.5, 8908.0: 0.5, 8827.0: 0.5,  
8828.0: 0, 8907.0: 0.5, 8906.0: 0.5, 8825.0: 0.5, 8903.0: 0.5, 9067.0: 0.5, 90  
70.0: 0.5, 9069.0: 0.5, 9068.0: 0.5, 9065.0: 0.5, 9145.0: 0.499995, 9146.0: 0.  
5, 9147.0: 0.5, 9150.0: 0.5, 9142.0: 0.500005, 8899.0: 0.50005, 8900.0: 0.5, 8  
819.0: 0.5, 8891.0: 0.5, 9061.0: 0.5, 9062.0: 0.5, 9053.0: 1.0, 9133.0: 0.5, 9  
134.0: 0.5, 9141.0: 0.5, 9140.0: 0.5, 8897.0: 0.5, 9059.0: 0.5, 9131.0: 0.5, 9  
137.0: 0.5, 9625.0: 0.5, 9634.0: 0.5, 9553.0: 0.5, 9556.0: 0.5, 9555.0: 0.5, 9  
554.0: 0.5, 9551.0: 0.5, 9631.0: 0.5, 9632.0: 0.5, 9633.0: 0.5, 9636.0: 0.5, 9  
628.0: 0.5, 9547.0: 0.5, 9548.0: 0.5, 9539.0: 0.5, 9619.0: 0.5, 9620.0: 0.5, 9  
627.0: 0.5, 9626.0: 0.5, 9545.0: 0.5, 9617.0: 0.5, 9623.0: 0.5, 9787.0: 0.4995  
45, 9796.0: 0.5, 9793.0: 0.5, 9794.0: 0.5, 9795.0: 0.5, 9798.0: 0.5, 9790.0:  
0.5, 9781.0: 0.5, 9782.0: 0.5, 9789.0: 0.5, 9788.0: 0.5, 9779.0: 0.5, 9785.0:  
0.5, 9859.0: 0.5, 9862.0: 0.5, 9861.0: 0.5, 9860.0: 0.5, 9857.0: 0.5, 9865.0:  
0.4995, 9874.0: 0.5, 9873.0: 0.5, 9866.0: 0.495, 9867.0: 0.4995, 9876.0: 0.5,  
9870.0: 0.5, 9850.0: 0.5, 3289.0: 0.5, 3292.0: 0.5, 1105.0: 0.5, 1106.0: 0, 25  
63.0: 0.5, 2564.0: 0, 3049.0: 0.5, 3050.0: 0, 3211.0: 0.5, 3212.0: 0, 3265.0:  
0.5, 3266.0: 0, 3291.0: 0.5, 3290.0: 0.5, 1103.0: 0.5, 2561.0: 0.5, 3047.0: 0.  
5, 3209.0: 0.5, 3263.0: 0.5, 3287.0: 0.5, 7663.0: 0.5, 7666.0: 0.5, 6937.0: 0.  
5, 6938.0: 0, 7423.0: 0.5, 7424.0: 0, 7585.0: 0.5, 7586.0: 0, 7639.0: 0.5, 764  
0.0: 0, 7665.0: 0.5, 7664.0: 0.5, 6935.0: 0.5, 7421.0: 0.5, 7583.0: 0.5, 7637.  
0: 0.5, 7661.0: 0.5, 9121.0: 0.5, 9124.0: 0.5, 8881.0: 0.5, 8882.0: 0, 9043.0:  
0.5, 9044.0: 0, 9097.0: 0.5, 9098.0: 0, 9123.0: 0.5, 9122.0: 0.5, 8879.0: 0.5,  
9041.0: 0.5, 9095.0: 0.5, 9119.0: 0.5, 9607.0: 0.5, 9610.0: 0.5, 9529.0: 0.5,  
9530.0: 0, 9583.0: 0.5, 9584.0: 0, 9609.0: 0.5, 9608.0: 0.5, 9527.0: 0.5, 958  
1.0: 0.5, 9605.0: 0.5, 9769.0: 0.5, 9772.0: 0.5, 9745.0: 0.5, 9746.0: 0, 9771.  
0: 0.5, 9770.0: 0.5, 9743.0: 0.5, 9767.0: 0.5, 9823.0: 0.5, 9826.0: 0.5, 9825.  
0: 0.5, 9824.0: 0.5, 9821.0: 0.5, 9847.0: 0.5, 9848.0: 0.5, 9849.0: 0.5, 9852.  
0: 0.5, 9844.0: 0.5, 3283.0: 0.5, 3284.0: 0.5, 1097.0: 0.5, 2555.0: 0.5, 3041.  
0: 0.5, 3203.0: 0.5, 3257.0: 0.5, 3275.0: 0.5, 7657.0: 0.5, 7658.0: 0.5, 6929.  
0: 0.5, 7415.0: 0.5, 7577.0: 0.5, 7631.0: 0.5, 7649.0: 0.5, 9115.0: 0.5, 9116.  
0: 0.5, 8873.0: 0.5, 9035.0: 0.5, 9089.0: 0.5, 9107.0: 0.5, 9601.0: 0.5, 9602.  
0: 0.5, 9521.0: 0.5, 9575.0: 0.5, 9593.0: 0.5, 9763.0: 0.5, 9764.0: 0.5, 9737.  
0: 0.5, 9755.0: 0.5, 9817.0: 0.5, 9818.0: 0.5, 9809.0: 0.5, 9835.0: 0.5, 9836.  
0: 0.5, 9843.0: 0.5, 9842.0: 0.5, 3281.0: 0.5, 7655.0: 0.5, 9113.0: 0.5, 9599.  
0: 0.5, 9761.0: 0.5, 9815.0: 0.5, 9833.0: 0.5, 9839.0: 0.5}

-----  
| 0 | 0 | 0 |

-----  
| 0 | 0 | 0 |

-----  
| 0 | 0 | 0 |

-----  
| \* | 0 | 0 |

-----  
| 0 | x | 0 |

-----  
| 0 | 0 | 0 |

	*		x	
	0		x	
	0		0	
			*	

	*		x	
	0		x	
	0		*	
			*	

You win!

self.estimateds from load\_policy() function

```
{9841.0: 0.4999514633194276, 16402.0: 0.5, 14215.0: 0.5, 14944.0: 0.5, 14701.0: 0.5, 14782.0: 0.5, 14755.0: 0.5, 14764.0: 0, 14758.0: 0.5, 14749.0: 0.5, 14750.0: 0, 14757.0: 0.5, 14766.0: 0, 14756.0: 0, 14773.0: 0.5, 14800.0: 0.5, 14797.0: 0.5, 14798.0: 0, 14799.0: 0.5, 14802.0: 0.5, 14776.0: 0.5, 14775.0: 0.5, 14774.0: 0, 14779.0: 0.5, 14806.0: 0.5, 14805.0: 0.5, 14814.0: 0, 14788.0: 0, 14780.0: 0, 14781.0: 0.5, 14808.0: 0.5, 14790.0: 0, 14784.0: 0.5, 14728.0: 0.5, 14647.0: 0.5, 14656.0: 0.5, 14653.0: 1.0, 14655.0: 0.5, 14658.0: 0.5, 14650.0: 0.5, 14641.0: 0.5, 14642.0: 0, 14649.0: 0.5, 14648.0: 0, 14719.0: 0.5, 14722.0: 0.5, 14721.0: 0.5, 14720.0: 0, 14725.0: 0.5, 14734.0: 0.5, 14733.0: 0.5, 14726.0: 0, 14727.0: 0.5, 14736.0: 0.5, 14730.0: 0.5, 14710.0: 0.5, 14629.0: 0.5, 14632.0: 0.5, 14605.0: 1.0, 14631.0: 0.5, 14630.0: 0.5, 14603.0: 1.0, 14627.0: 1.0, 14683.0: 0.5, 14686.0: 0.5, 14685.0: 0.5, 14684.0: 0.5, 14681.0: 0.5, 14762.0: 0, 14707.0: 0.5, 14708.0: 0.5, 14709.0: 0.5, 14712.0: 0.5, 14704.0: 0.5, 14623.0: 0.5, 14624.0: 0.5, 14597.0: 1.0, 14615.0: 0.5, 14677.0: 0.5, 14678.0: 0.5, 14669.0: 0.5, 14695.0: 0.5, 14696.0: 0.5, 14703.0: 0.5, 14702.0: 0.5, 14621.0: 0.5, 14675.0: 0.5, 14693.0: 0.5, 14699.0: 0.5, 14863.0: 0.5, 15106.0: 0.5, 15079.0: 0.5, 15088.0: 0, 15082.0: 0.5, 15073.0: 0.5, 15074.0: 0.5, 15081.0: 0.5, 15090.0: 0, 15080.0: 0.5, 15071.0: 0.5, 15077.0: 1.0, 15097.0: 0.5, 15124.0: 0.5, 15121.0: 1.0, 15123.0: 0.5, 15126.0: 0.5, 15100.0: 0.5, 15099.0: 0.5, 15098.0: 0.5, 15095.0: 1.0, 15103.0: 1.0, 15105.0: 0.5, 15132.0: 0.5, 15129.0: 1.0, 15114.0: 0, 15108.0: 0.5, 14890.0: 0.5, 14881.0: 0.5, 14884.0: 0.5, 14883.0: 0.5, 14882.0: 0, 14887.0: 1.0, 14889.0: 0.5, 14898.0: 0.5, 14895.0: 1.0, 14892.0: 0.5, 14872.0: 0.5, 14845.0: 0.5, 14848.0: 0.5, 14847.0: 0.5, 14846.0: 0.5, 14843.0: 1.0, 14869.0: 1.0, 14871.0: 0.5, 14874.0: 0.5, 14866.0: 0.5, 14839.0: 0.5, 14840.0: 0.5, 14831.0: 0.5, 14857.0: 0.5, 14858.0: 0.5, 14865.0: 0.5, 14864.0: 0.5, 14837.0: 0.5, 14855.0: 0.5, 14861.0: 1.0, 14917.0: 0.5, 15160.0: 0.5, 15151.0: 0.5, 15232.0: 0.5, 15229.0: 0.5, 15230.0: 0, 15231.0: 0.5, 15234.0: 0.5, 15154.0: 0.5, 15153.0: 0.5, 15152.0: 0.5, 15149.0: 0.5, 15157.0: 0.5, 15238.0: 0.5, 15237.0: 0.5, 15246.0: 0, 15166.0: 0, 15158.0: 0.5, 15159.0: 0.5, 15240.0: 0.5, 15168.0: 0, 15162.0: 0.5, 14998.0: 0.5, 14989.0: 0.5, 14992.0: 0.5, 14991.0: 0.5, 14990.0: 0, 14995.0: 0.5, 15004.0: 0, 14996.0: 0, 14997.0: 0.5, 15006.0: 0, 15000.0: 0.5, 14926.0: 0.5, 14923.0: 0.5, 14924.0: 0.5, 14925.0: 0.5, 14928.0: 0.5, 14920.0: 0.5, 14911.0: 0.5, 14912.0: 0.5, 14919.0: 0.5, 14918.0: 0.5, 14909.0: 0.5, 14915.0: 0.5, 14935.0: 0.5, 15178.0: 0.5, 15175.0: 0.5, 15256.0: 0.5, 15255.0: 1.0, 15202.0: 0.5, 15201.0: 1.0, 15176.0: 0.5, 15177.0: 0.5, 15258.0: 0.5, 15204.0: 0.5, 15180.0: 0.5, 15016.0: 0.5, 15013.0: 0.5, 15040.0: 0.5, 15039.0: 1.0, 15014.0: 0, 15015.0: 0.5, 15042.0: 0.5, 15018.0: 0.5, 14962.0: 0.5, 14959.0: 0.5, 14960.0: 0, 14961.0: 0.5, 14964.0: 0.5, 14938.0: 0.5, 14937.0: 0.5, 14936.0: 0.5, 14933.0: 0.5, 14941.0: 0.5, 15184.0: 0.5, 15183.0: 0.5, 15264.0: 0.5, 15210.0: 0.5, 15192.0: 0, 15022.0: 0.5, 15021.0: 0.5, 15048.0: 0.5, 15030.0: 0, 14968.0: 0.5, 14967.0: 0.5, 14976.0: 0.5, 14950.0: 0.5, 14949.0: 0.5, 14942.0: 0.5, 14943.0: 0.5, 15186.0: 0.5, 15024.0: 0.5, 14970.0: 0.5, 14952.0: 0.5, 14946.0: 0.5, 14458.0: 0.5, 13729.0: 0.5, 13810.0: 0.5, 13783.0: 0.5, 13792.0: 0, 13786.0: 0.5, 13777.0: 0.5, 13778.0: 0, 13785.0: 1.0, 13784.0: 0, 13801.0: 0.5, 13828.0: 0, 13804.0: 0.5, 13803.0: 0.5, 13830.0: 0, 13802.0: 0, 13807.0: 0.5, 13834.0: 0, 13816.0: 0, 13808.0: 0, 13809.0: 0.5, 13836.0: 0, 13818.0: 0, 13812.0: 0.5, 13756.0: 0.5, 13675.0: 0.5, 13684.0: 0, 13678.0: 0.5, 13669.0: 1.0, 13677.0: 0.5, 13686.0: 0, 13676.0: 0.5, 13667.0: 1.0, 13673.0: 1.0, 13747.0: 0.5, 13750.0: 0.5, 13749.0: 0.5, 13748.0: 0.5, 13745.0: 0.5, 13826.0: 0, 13753.0: 0.5, 13762.0: 0, 13754.0: 0.5, 13755.0: 0.5, 13764.0: 0, 13758.0: 0.5, 13738.0: 0, 13732.0: 0.5, 13651.0: 0.5, 13660.0: 0, 13652.0: 0.5, 13625.0: 0.5, 13634.0: 0, 13643.0: 1.0, 13705.0: 0.5, 13714.0: 0, 13706.0: 0.5, 13697.0: 0.5, 13723.0: 0.5, 13724.0: 0.5, 13731.0: 0.5, 13740.0: 0, 13730.0: 0.5, 13649.0: 0.5, 13658.0: 0, 13703.0: 0.5, 13712.0: 0, 13721.0: 0.5, 13727.0: 0.5, 13736.0: 0, 14377.0: 0.5, 14404.0: 0.5, 14395.0: 0.5, 14398.0: 0.5, 14397.0: 0.5, 14396.0: 0.5, 14393.0: 1.0, 14401.0: 1.0, 14403.0: 0.5, 14412.0: 0, 14406.0: 0.5, 14386.0: 0, 14380.0: 0.5, 14353.0: 0.5, 14362.0: 0, 14354.0: 0.5, 14345.0: 0.
```

5, 14371.0: 0.5, 14372.0: 0.5, 14379.0: 0.5, 14388.0: 0, 14378.0: 0.5, 14351.0: 0.5, 14360.0: 0, 14369.0: 0.5, 14375.0: 1.0, 14431.0: 0.5, 14512.0: 0.5, 14503.0: 0.5, 14506.0: 0.5, 14505.0: 0.5, 14504.0: 0, 14509.0: 0.5, 14518.0: 0, 14510.0: 0, 14511.0: 0.5, 14520.0: 0, 14514.0: 0.5, 14440.0: 0, 14434.0: 0.5, 14425.0: 0.5, 14426.0: 0.5, 14433.0: 0.5, 14442.0: 0, 14432.0: 0.5, 14423.0: 0.5, 14429.0: 0.5, 14438.0: 0, 14449.0: 0.5, 14530.0: 0.5, 14527.0: 0.5, 14554.0: 0, 14528.0: 0, 14529.0: 0.5, 14556.0: 0, 14532.0: 0.5, 14476.0: 0.5, 14473.0: 0.5, 14474.0: 0.5, 14475.0: 0.5, 14478.0: 0.5, 14452.0: 0.5, 14451.0: 0.5, 14450.0: 0.5, 14447.0: 0.5, 14455.0: 0.5, 14536.0: 0.5, 14535.0: 0.5, 14562.0: 0, 14544.0: 0, 14482.0: 0.5, 14481.0: 0.5, 14490.0: 0, 14464.0: 0, 14456.0: 0.5, 14457.0: 0.5, 14538.0: 0.5, 14484.0: 0.5, 14466.0: 0, 14460.0: 0.5, 14296.0: 0.5, 13567.0: 0.5, 13594.0: 0.5, 13351.0: 0.5, 13360.0: 0.5, 13357.0: 0.5, 13358.0: 0, 13359.0: 0.5, 13362.0: 0.5, 13354.0: 0.5, 13345.0: 0.5, 13346.0: 0, 13353.0: 0.5, 13352.0: 0, 13585.0: 0.5, 13588.0: 0.5, 13587.0: 0.5, 13586.0: 0, 13591.0: 0.5, 13600.0: 0.5, 13599.0: 0.5, 13842.0: 0, 13592.0: 0, 13593.0: 0.5, 13602.0: 0.5, 13596.0: 0.5, 13576.0: 0.5, 13333.0: 0.5, 13336.0: 0.5, 13309.0: 0.5, 13310.0: 0, 13335.0: 0.5, 13334.0: 0, 13549.0: 0.5, 13552.0: 0.5, 13551.0: 1.0, 13550.0: 0, 13573.0: 0.5, 13574.0: 0, 13575.0: 0.5, 13578.0: 0.5, 13570.0: 0.5, 13327.0: 0.5, 13328.0: 0, 13543.0: 0.5, 13544.0: 0, 13561.0: 0.5, 13562.0: 0, 13569.0: 0.5, 13568.0: 0, 14053.0: 0.5, 14080.0: 0.5, 14071.0: 0.5, 14074.0: 0.5, 14073.0: 0.5, 14072.0: 0, 14077.0: 0.5, 14086.0: 0.5, 14085.0: 0.5, 14078.0: 0, 14079.0: 0.5, 14088.0: 0.5, 14082.0: 0.5, 14062.0: 0.5, 14035.0: 0.5, 14038.0: 0.5, 14037.0: 0.5, 14036.0: 0, 14059.0: 0.5, 14060.0: 0, 14061.0: 0.5, 14064.0: 0.5, 14056.0: 0.5, 14029.0: 0.5, 14030.0: 0, 14047.0: 0.5, 14048.0: 0, 14055.0: 0.5, 14054.0: 0, 14269.0: 0.5, 14278.0: 0.5, 14275.0: 0.5, 14276.0: 0, 14277.0: 0.5, 14280.0: 0.5, 14272.0: 0.5, 14263.0: 0.5, 14264.0: 0, 14271.0: 0.5, 14270.0: 0, 14287.0: 0.5, 14314.0: 0.5, 14311.0: 0.5, 14312.0: 0, 14313.0: 0.5, 14316.0: 0.5, 14290.0: 0.5, 14289.0: 0.5, 14288.0: 0, 14293.0: 0.5, 14320.0: 0.5, 14319.0: 0.5, 14328.0: 0.5, 14302.0: 0.5, 14301.0: 0.5, 14294.0: 0, 14295.0: 0.5, 14322.0: 0.5, 14304.0: 0.5, 14298.0: 0.5, 14242.0: 0.5, 13513.0: 0.5, 13522.0: 0.5, 13279.0: 0.5, 13282.0: 0.5, 13201.0: 0.5, 13202.0: 0, 13281.0: 0.5, 13280.0: 0.5, 13199.0: 0.5, 13277.0: 0.5, 13441.0: 0.5, 13444.0: 0.5, 13443.0: 0.5, 13442.0: 0.5, 13439.0: 1.0, 13519.0: 0.5, 13520.0: 0.5, 13521.0: 0.5, 13524.0: 0.5, 13516.0: 0.5, 13273.0: 0.5, 13274.0: 0.5, 13193.0: 0.5, 13265.0: 0.5, 13435.0: 0.5, 13436.0: 0.5, 13427.0: 1.0, 13507.0: 0.5, 13508.0: 0.5, 13515.0: 0.5, 13514.0: 0.5, 13271.0: 0.5, 13433.0: 0.5, 13505.0: 0.5, 13511.0: 0.5, 13999.0: 0.5, 14008.0: 0.5, 13927.0: 0.5, 13930.0: 0.5, 13929.0: 0.5, 13928.0: 0.5, 13925.0: 1.0, 14005.0: 0.5, 14006.0: 0.5, 14007.0: 0.5, 14010.0: 0.5, 14002.0: 0.5, 13921.0: 0.5, 13922.0: 0.5, 13913.0: 0.5, 13993.0: 0.5, 13994.0: 0.5, 14001.0: 0.5, 14000.0: 0.5, 13919.0: 0.5, 13991.0: 0.5, 13997.0: 0.5, 14161.0: 0.5, 14170.0: 0.5, 14167.0: 1.0, 14169.0: 0.5, 14172.0: 0.5, 14164.0: 0.5, 14155.0: 0.5, 14156.0: 0.5, 14163.0: 0.5, 14162.0: 0.5, 14153.0: 0.5, 14159.0: 1.0, 14233.0: 0.5, 14236.0: 0.5, 14235.0: 0.5, 14234.0: 0.5, 14231.0: 0.5, 14239.0: 0.5, 14248.0: 0.5, 14247.0: 0.5, 14240.0: 0.5, 14241.0: 0.5, 14250.0: 0.5, 14244.0: 0.5, 14224.0: 0.5, 13495.0: 0.5, 13498.0: 0.5, 13255.0: 0.5, 13256.0: 0, 13417.0: 0.5, 13418.0: 0, 13471.0: 0.5, 13472.0: 0, 13497.0: 0.5, 13496.0: 0.5, 13253.0: 0.5, 13415.0: 0.5, 13469.0: 0.5, 13493.0: 0.5, 13981.0: 0.5, 13984.0: 0.5, 13903.0: 0.5, 13904.0: 0, 13957.0: 0.5, 13958.0: 0, 13983.0: 0.5, 13982.0: 0.5, 13901.0: 0.5, 13955.0: 0.5, 13979.0: 0.5, 14143.0: 0.5, 14146.0: 0.5, 14119.0: 0.5, 14120.0: 0, 14145.0: 0.5, 14144.0: 0.5, 14117.0: 0.5, 14141.0: 1.0, 14197.0: 0.5, 14200.0: 0.5, 14199.0: 0.5, 14198.0: 0.5, 14195.0: 0.5, 14221.0: 0.5, 14222.0: 0.5, 14223.0: 0.5, 14226.0: 0.5, 14218.0: 0.5, 13489.0: 0.5, 13490.0: 0.5, 13247.0: 0.5, 13409.0: 0.5, 13463.0: 0.5, 13481.0: 0.5, 13975.0: 0.5, 13976.0: 0.5, 13895.0: 0.5, 13949.0: 0.5, 13967.0: 0.5, 14137.0: 0.5, 14138.0: 0.5, 14111.0: 0.5, 14129.0: 0.5, 14191.0: 0.5, 14192.0: 0.5, 14183.0: 0.5, 14209.0: 0.5, 14210.0: 0.5, 14217.0: 0.5, 14216.0: 0.5, 13487.0: 0.5, 13973.0: 0.5, 14135.0: 0.5, 14189.0: 0.5, 14207.0: 0.5, 14213.0: 0.5, 15673.0: 0.5, 17860.0: 0.5, 17617.0: 0.5, 17698.0: 0.5, 17671.0: 0.5, 17680.0: 0.5, 17677.0: 0.5, 17678.0: 0, 17679.0: 1.0, 17674.0: 0, 17672.0: 0, 17689.0: 0.5, 1771

6.0: 0.5, 17713.0: 0.5, 17714.0: 0, 17715.0: 0.5, 17718.0: 0, 17692.0: 0, 1769  
0.0: 0, 17695.0: 0.5, 17722.0: 0.5, 17721.0: 0.5, 17730.0: 0.5, 17704.0: 0.5,  
17703.0: 0.5, 17696.0: 0, 17697.0: 0.5, 17724.0: 0.5, 17706.0: 0.5, 17700.0:  
0, 17644.0: 0.5, 17563.0: 0.5, 17572.0: 0.5, 17569.0: 0.5, 17570.0: 0.5, 1757  
1.0: 0.5, 17574.0: 0.5, 17566.0: 0.5, 17557.0: 1.0, 17565.0: 0.5, 17564.0: 0.  
5, 17555.0: 1.0, 17561.0: 0.5, 17635.0: 0.5, 17638.0: 0.5, 17637.0: 0.5, 1763  
6.0: 0.5, 17633.0: 0.5, 17641.0: 0.5, 17650.0: 0.5, 17649.0: 0.5, 17642.0: 0.  
5, 17643.0: 0.5, 17652.0: 0.5, 17646.0: 0.5, 17626.0: 0.5, 17545.0: 0.5, 1754  
8.0: 0.5, 17521.0: 1.0, 17547.0: 0.5, 17546.0: 0.5, 17519.0: 1.0, 17543.0: 0.  
5, 17599.0: 0.5, 17602.0: 0.5, 17601.0: 1.0, 17600.0: 0.5, 17597.0: 0.5, 1762  
3.0: 0.5, 17624.0: 0.5, 17625.0: 0.5, 17628.0: 0.5, 17620.0: 0.5, 17539.0: 0.  
5, 17540.0: 0.5, 17513.0: 1.0, 17531.0: 1.0, 17593.0: 0.5, 17594.0: 0.5, 1758  
5.0: 0.5, 17666.0: 0, 17611.0: 0.5, 17612.0: 0.5, 17619.0: 0.5, 17618.0: 0.5,  
17537.0: 0.5, 17591.0: 0.5, 17609.0: 0.5, 17615.0: 0.5, 17779.0: 0.5, 18022.0:  
0.5, 17995.0: 0.5, 18004.0: 0, 17998.0: 0.5, 17989.0: 1.0, 17997.0: 1.0, 1799  
6.0: 0.5, 17987.0: 1.0, 17993.0: 0.5, 18002.0: 0, 18013.0: 1.0, 18019.0: 0.5,  
18046.0: 0.5, 18037.0: 1.0, 18045.0: 0.5, 18054.0: 0, 18028.0: 0, 18020.0: 0.  
5, 18011.0: 1.0, 18021.0: 0.5, 18048.0: 0.5, 18039.0: 1.0, 18030.0: 0, 18024.  
0: 0.5, 18015.0: 1.0, 17806.0: 0.5, 17797.0: 1.0, 17803.0: 0.5, 17812.0: 0.5,  
17811.0: 0.5, 17804.0: 0.5, 17795.0: 1.0, 17805.0: 0.5, 17814.0: 0.5, 17808.0:  
0.5, 17799.0: 1.0, 17788.0: 0.5, 17761.0: 0.5, 17764.0: 0.5, 17763.0: 1.0, 177  
62.0: 0.5, 17759.0: 0.5, 17785.0: 0.5, 17786.0: 0.5, 17787.0: 0.5, 17790.0: 0.  
5, 17782.0: 0.5, 17755.0: 0.5, 17756.0: 0.5, 17747.0: 1.0, 17773.0: 1.0, 1778  
1.0: 0.5, 17780.0: 0.5, 17753.0: 0.5, 17771.0: 1.0, 17777.0: 0.5, 17833.0: 0.  
5, 18076.0: 0.5, 18067.0: 0.5, 18148.0: 0.5, 18145.0: 0.5, 18146.0: 0, 18147.  
0: 1.0, 18070.0: 0.5, 18069.0: 1.0, 18068.0: 0.5, 18065.0: 0.5, 18073.0: 0.5,  
18154.0: 0.5, 18153.0: 1.0, 18082.0: 0, 18074.0: 0.5, 18075.0: 1.0, 17914.0:  
0.5, 17905.0: 0.5, 17908.0: 0, 17906.0: 0, 17911.0: 0.5, 17920.0: 0.5, 17919.  
0: 1.0, 17912.0: 0, 17913.0: 1.0, 17842.0: 0.5, 17839.0: 0.5, 17840.0: 0.5, 17  
841.0: 1.0, 17836.0: 0.5, 17827.0: 0.5, 17828.0: 0.5, 17835.0: 1.0, 17834.0:  
0.5, 17825.0: 0.5, 17831.0: 0.5, 17851.0: 0.5, 18094.0: 0.5, 18091.0: 0.5, 181  
72.0: 0.5, 18171.0: 1.0, 18118.0: 0.5, 18117.0: 1.0, 18092.0: 0.5, 18093.0: 0.  
5, 18174.0: 0.5, 18120.0: 0.5, 18096.0: 0.5, 17932.0: 0.5, 17929.0: 0.5, 1795  
6.0: 0.5, 17955.0: 1.0, 17930.0: 0, 17931.0: 0.5, 17958.0: 0.5, 17934.0: 0, 17  
878.0: 0.5, 17875.0: 0.5, 17876.0: 0.5, 17877.0: 0.5, 17880.0: 0.5, 17854.0:  
0.5, 17853.0: 0.5, 17852.0: 0.5, 17849.0: 0.5, 17857.0: 0.5, 18100.0: 0.5, 180  
99.0: 0.5, 18180.0: 0.5, 18126.0: 0.5, 18108.0: 0, 17938.0: 0.5, 17937.0: 0.5,  
17964.0: 0.5, 17946.0: 0.5, 17884.0: 0.5, 17883.0: 0.5, 17892.0: 0.5, 17866.0:  
0.5, 17865.0: 0.5, 17858.0: 0.5, 17859.0: 0.5, 18102.0: 0.5, 17940.0: 0.5, 178  
86.0: 0.5, 17868.0: 0.5, 17862.0: 0.5, 15916.0: 0.5, 15835.0: 0.5, 15862.0: 0.  
5, 15853.0: 1.0, 15859.0: 0.5, 15868.0: 0, 15860.0: 0.5, 15851.0: 1.0, 15861.  
0: 0.5, 15870.0: 0, 15864.0: 0.5, 15855.0: 1.0, 15844.0: 0, 15838.0: 0.5, 1581  
1.0: 0.5, 15820.0: 0, 15812.0: 0.5, 15803.0: 1.0, 15829.0: 1.0, 15837.0: 0.5,  
15846.0: 0, 15836.0: 0.5, 15809.0: 0.5, 15818.0: 0, 15827.0: 1.0, 15833.0: 0.  
5, 15842.0: 0, 15889.0: 0.5, 15970.0: 0.5, 15961.0: 0.5, 15964.0: 0.5, 15963.  
0: 1.0, 15962.0: 0, 15967.0: 0.5, 15976.0: 0, 15968.0: 0, 15969.0: 1.0, 15898.  
0: 0, 15892.0: 0.5, 15883.0: 0.5, 15884.0: 0.5, 15891.0: 1.0, 15890.0: 0.5, 15  
881.0: 0.5, 15887.0: 0.5, 15896.0: 0, 15907.0: 0.5, 15988.0: 0.5, 15985.0: 0.  
5, 16012.0: 0, 15986.0: 0, 15987.0: 0.5, 16014.0: 0, 15990.0: 0.5, 15934.0: 0.  
5, 15931.0: 0.5, 15932.0: 0.5, 15933.0: 0.5, 15936.0: 0.5, 15910.0: 0.5, 1590  
9.0: 0.5, 15908.0: 0.5, 15905.0: 0.5, 15913.0: 0.5, 15994.0: 0.5, 15993.0: 0.  
5, 16020.0: 0, 16002.0: 0, 15940.0: 0.5, 15939.0: 0.5, 15948.0: 0, 15922.0: 0,  
15914.0: 0.5, 15915.0: 0.5, 15996.0: 0.5, 15942.0: 0.5, 15924.0: 0, 15918.0:  
0.5, 15754.0: 0.5, 15511.0: 0.5, 15538.0: 0.5, 15529.0: 0.5, 15532.0: 0.5, 155  
31.0: 0.5, 15530.0: 0, 15535.0: 0.5, 15544.0: 0.5, 15543.0: 0.5, 15536.0: 0, 1  
5537.0: 0.5, 15546.0: 0.5, 15540.0: 0.5, 15520.0: 0.5, 15493.0: 0.5, 15496.0:  
0.5, 15495.0: 1.0, 15494.0: 0, 15517.0: 0.5, 15518.0: 0, 15519.0: 0.5, 15522.  
0: 0.5, 15514.0: 0.5, 15487.0: 0.5, 15488.0: 0, 15505.0: 0.5, 15506.0: 0, 1551  
3.0: 0.5, 15512.0: 0, 15727.0: 0.5, 15736.0: 0.5, 15733.0: 0.5, 15734.0: 0, 15  
735.0: 1.0, 15730.0: 0.5, 15721.0: 0.5, 15722.0: 0, 15729.0: 1.0, 15728.0: 0,

15745.0: 0.5, 15772.0: 0.5, 15769.0: 0.5, 15770.0: 0, 15771.0: 0.5, 15774.0:  
0.5, 15748.0: 0.5, 15747.0: 0.5, 15746.0: 0, 15751.0: 0.5, 15778.0: 0.5, 1577  
7.0: 0.5, 15786.0: 0.5, 15760.0: 0.5, 15759.0: 0.5, 15752.0: 0, 15753.0: 0.5,  
15780.0: 0.5, 15762.0: 0.5, 15756.0: 0.5, 15700.0: 0.5005, 15457.0: 0.5, 1546  
6.0: 0.5, 15385.0: 0.5, 15388.0: 0.5, 15387.0: 0.5, 15386.0: 0.5, 15383.0: 0.  
5, 15463.0: 0.5, 15464.0: 0.5, 15465.0: 0.5, 15468.0: 0.5, 15460.0: 0.5005, 15  
379.0: 0.5, 15380.0: 0.5, 15371.0: 1.0, 15451.0: 0.505, 15452.0: 0.55, 15459.  
0: 0.5, 15458.0: 0.5, 15377.0: 0.5, 15449.0: 0.5, 15455.0: 0.5, 15619.0: 0.5,  
15628.0: 0.5, 15625.0: 0.5, 15626.0: 0.5, 15627.0: 0.5, 15630.0: 0.5, 15622.0:  
0.5, 15613.0: 1.0, 15621.0: 0.5, 15620.0: 0.5, 15611.0: 1.0, 15617.0: 0.5, 156  
91.0: 0.505, 15694.0: 0.55, 15693.0: 0.5, 15692.0: 0.5, 15689.0: 0.5, 15697.0:  
0.5, 15706.0: 0.5, 15705.0: 0.5, 15698.0: 0.5, 15699.0: 0.5, 15708.0: 0.5, 157  
02.0: 0.5, 15682.0: 0.5, 15439.0: 0.5, 15442.0: 0.5, 15361.0: 0.5, 15362.0: 0,  
15415.0: 0.5, 15416.0: 0, 15441.0: 0.5, 15440.0: 0.5, 15359.0: 0.5, 15413.0:  
0.5, 15437.0: 0.5, 15601.0: 0.5, 15604.0: 0.5, 15577.0: 0.5, 15578.0: 0, 1560  
3.0: 0.5, 15602.0: 0.5, 15575.0: 0.5, 15599.0: 0.5, 15655.0: 0.5, 15658.0: 0.  
5, 15657.0: 1.0, 15656.0: 0.5, 15653.0: 0.5, 15679.0: 0.5, 15680.0: 0.5, 1568  
1.0: 0.5, 15684.0: 0.5, 15676.0: 0.5, 15433.0: 0.5, 15434.0: 0.5, 15353.0: 0.  
5, 15407.0: 0.5, 15425.0: 0.5, 15595.0: 0.5, 15596.0: 0.5, 15569.0: 0.5, 1558  
7.0: 1.0, 15649.0: 0.5, 15650.0: 0.5, 15641.0: 0.5, 15667.0: 0.5, 15668.0: 0.  
5, 15675.0: 0.5, 15674.0: 0.5, 15431.0: 0.5, 15593.0: 0.5, 15647.0: 0.5, 1566  
5.0: 0.5, 15671.0: 0.5, 16159.0: 0.5, 18346.0: 0.5, 18265.0: 0.5, 18994.0: 0,  
18292.0: 0.5, 18283.0: 0.5, 19012.0: 0, 18286.0: 0.5, 18285.0: 0.5, 19014.0:  
0, 18284.0: 0.5, 18281.0: 0.5, 19010.0: 0, 18289.0: 0.5, 19018.0: 0, 18298.0:  
0.5, 18297.0: 0.5, 19026.0: 0, 18290.0: 0.5, 18291.0: 0.5, 19020.0: 0, 18300.  
0: 0.5, 18294.0: 0.5, 18274.0: 0.5, 18247.0: 1.0, 18271.0: 0.5, 19000.0: 0, 18  
272.0: 0.5, 18245.0: 1.0, 18273.0: 0.5, 19002.0: 0, 18276.0: 0.5, 18249.0: 1.  
0, 18268.0: 0.5, 18241.0: 1.0, 18259.0: 0.5, 18988.0: 0, 18260.0: 0.5, 18233.  
0: 1.0, 18267.0: 0.5, 18996.0: 0, 18266.0: 0.5, 18239.0: 1.0, 18257.0: 0.5, 18  
986.0: 0, 18263.0: 0.5, 18992.0: 0, 18319.0: 0.5, 19048.0: 0, 18400.0: 0.5, 18  
391.0: 0.5, 19120.0: 0, 18394.0: 0, 18392.0: 0, 18397.0: 0.5, 19126.0: 0, 1840  
6.0: 0.5, 18405.0: 0.5, 19134.0: 0, 18398.0: 0, 18399.0: 0.5, 19128.0: 0, 1840  
8.0: 0.5, 18402.0: 0, 18328.0: 0.5, 18325.0: 0.5, 19054.0: 0, 18326.0: 0.5, 18  
327.0: 0.5, 19056.0: 0, 18330.0: 0.5, 18322.0: 0.5, 18313.0: 0.5, 19042.0: 0,  
18314.0: 0.5, 18321.0: 0.5, 19050.0: 0, 18320.0: 0.5, 18311.0: 0.5, 19040.0:  
0, 18317.0: 0.5, 19046.0: 0, 18337.0: 0.5, 19066.0: 0, 18418.0: 0.5, 18415.0:  
0.5, 19144.0: 0, 18442.0: 0.5, 18441.0: 1.0, 18416.0: 0, 18417.0: 0.5, 19146.  
0: 0, 18444.0: 0.5, 18420.0: 0, 18364.0: 0.5, 18361.0: 0.5, 19090.0: 0, 18362.  
0: 0.5, 18363.0: 0.5, 19092.0: 0, 18366.0: 0.5, 18340.0: 0.5, 18339.0: 0.5, 19  
068.0: 0, 18338.0: 0.5, 18335.0: 0.5, 19064.0: 0, 18343.0: 0.5, 19072.0: 0, 18  
424.0: 0.5, 18423.0: 0.5, 19152.0: 0, 18450.0: 0.5, 18432.0: 0.5, 18370.0: 0.  
5, 18369.0: 0.5, 19098.0: 0, 18378.0: 0.5, 18352.0: 0.5, 18351.0: 0.5, 19080.  
0: 0, 18344.0: 0.5, 18345.0: 0.5, 19074.0: 0, 18426.0: 0.5, 18372.0: 0.5, 1835  
4.0: 0.5, 18348.0: 0.5, 16888.0: 0.5, 16807.0: 0.5, 16834.0: 0.5, 16825.0: 0.  
5, 16828.0: 0.5, 16827.0: 0.5, 16826.0: 0, 16831.0: 0.5, 16840.0: 0.5, 16839.  
0: 0.5, 16832.0: 0, 16833.0: 0.5, 16842.0: 0.5, 16836.0: 0.5, 16816.0: 0.5, 16  
789.0: 1.0, 16813.0: 0.5, 16814.0: 0.5, 16787.0: 1.0, 16815.0: 0.5, 16818.0:  
0.5, 16791.0: 1.0, 16810.0: 0.5, 16783.0: 1.0, 16801.0: 0.5, 16802.0: 0.5, 167  
75.0: 1.0, 16809.0: 0.5, 16808.0: 0.5, 16781.0: 1.0, 16799.0: 0.5, 16805.0: 0.  
5, 16861.0: 0.5, 16942.0: 0.5, 16933.0: 0.5, 16936.0: 0.5, 16935.0: 0.5, 1912  
2.0: 0, 16934.0: 0, 16939.0: 0.5, 16948.0: 0, 16940.0: 0, 16941.0: 0.5, 16950.  
0: 0, 16944.0: 0.5, 16870.0: 0.5, 16867.0: 0.5, 16868.0: 0.5, 16869.0: 0.5, 16  
872.0: 0.5, 16864.0: 0.5, 16855.0: 0.5, 16856.0: 0.5, 16863.0: 0.5, 16862.0:  
0.5, 16853.0: 0.5, 16859.0: 0.5, 16879.0: 0.5, 16960.0: 0.5, 16957.0: 0.5, 169  
84.0: 0.5, 16983.0: 1.0, 16958.0: 0, 16959.0: 0.5, 16986.0: 0.5, 16962.0: 0.5,  
16906.0: 0.5, 16903.0: 0.5, 16904.0: 0, 16905.0: 0.5, 16908.0: 0.5, 16882.0:  
0.5, 16881.0: 0.5, 16880.0: 0.5, 16877.0: 0.5, 16885.0: 0.5, 16966.0: 0.5, 169  
65.0: 0.5, 16992.0: 0.5, 16974.0: 0, 16912.0: 0.5, 16911.0: 0.5, 16920.0: 0.5,  
16894.0: 0.5, 16893.0: 0.5, 16886.0: 0.5, 16887.0: 0.5, 16968.0: 0.5, 16914.0:  
0.5, 16896.0: 0.5, 16890.0: 0.5, 16240.0: 0.5, 16213.0: 0.5, 16222.0: 0.5, 162

19.0: 0.5, 16220.0: 0, 16221.0: 0.5, 16224.0: 0.5, 16216.0: 0.5, 16207.0: 0.5, 16208.0: 0, 16215.0: 0.5, 16214.0: 0, 16231.0: 0.5, 16258.0: 0.5, 16255.0: 0.5, 16256.0: 0, 16257.0: 0.5, 16260.0: 0.5, 16234.0: 0.5, 16233.0: 0.5, 16232.0: 0, 16237.0: 0.5, 16264.0: 0.5, 16263.0: 0.5, 16272.0: 0.5, 16246.0: 0.5, 16245.0: 0.5, 16238.0: 0, 16239.0: 0.5, 16266.0: 0.5, 16248.0: 0.5, 16242.0: 0.5, 16186.0: 0.5, 16105.0: 0.5, 16114.0: 0.5, 16111.0: 0.5, 16112.0: 0.5, 16113.0: 0.5, 16116.0: 0.5, 16108.0: 0.5, 16099.0: 0.5, 16100.0: 0.5, 16107.0: 0.5, 16106.0: 0.5, 16097.0: 0.5, 16103.0: 0.5, 16177.0: 0.5, 16180.0: 0.5, 16179.0: 0.5, 16178.0: 0.5, 16175.0: 0.5, 16183.0: 0.5, 16192.0: 0.5, 16191.0: 0.5, 16184.0: 0.5, 16185.0: 0.5, 16194.0: 0.5, 16188.0: 0.5, 16168.0: 0.5, 16087.0: 0.5, 16090.0: 0.5, 16063.0: 1.0, 16089.0: 0.5, 16088.0: 0.5, 16061.0: 1.0, 16085.0: 0.5, 16141.0: 0.5, 16144.0: 0.5, 16143.0: 0.5, 16142.0: 0.5, 16139.0: 0.5, 16165.0: 0.5, 16166.0: 0.5, 16167.0: 0.5, 16170.0: 0.5, 16162.0: 0.5, 16081.0: 0.5, 16082.0: 0.5, 16055.0: 1.0, 16073.0: 0.5, 16135.0: 0.5, 16136.0: 0.5, 16127.0: 0.5, 16153.0: 0.5, 16154.0: 0.5, 16161.0: 0.5, 16160.0: 0.5, 16079.0: 0.5, 16133.0: 0.5, 16151.0: 0.5, 16157.0: 0.5, 16321.0: 0.5, 18508.0: 0.5, 18481.0: 0.5, 19210.0: 0, 18724.0: 0.5, 18715.0: 0.5, 19444.0: 0, 18718.0: 0.5, 18717.0: 0.5, 19446.0: 0, 18716.0: 0.5, 18713.0: 0.5, 19442.0: 0, 18721.0: 0.5, 19450.0: 0, 18730.0: 0, 18722.0: 0.5, 18723.0: 0.5, 19452.0: 0, 18732.0: 0, 18726.0: 0.5, 18490.0: 0.5, 18487.0: 0.5, 19216.0: 0, 18488.0: 0.5, 18489.0: 0.5, 19218.0: 0, 18492.0: 0.5, 18484.0: 0.5, 18475.0: 0.5, 19204.0: 0, 18476.0: 0.5, 18483.0: 0.5, 19212.0: 0, 18482.0: 0.5, 18473.0: 0.5, 19202.0: 0, 18479.0: 0.5, 19208.0: 0, 18499.0: 0.5, 19228.0: 0, 18742.0: 0.5, 18739.0: 0.5, 19468.0: 0, 18766.0: 0.5, 18765.0: 1.0, 18740.0: 0.5, 18741.0: 0.5, 19470.0: 0, 18768.0: 0.5, 18744.0: 0.5, 18526.0: 0.5, 18523.0: 0.5, 19252.0: 0, 18524.0: 0.5, 18525.0: 0.5, 19254.0: 0, 18528.0: 0.5, 18502.0: 0.5, 18501.0: 0.5, 19230.0: 0, 18500.0: 0.5, 18497.0: 0.5, 19226.0: 0, 18505.0: 0.5, 19234.0: 0, 18748.0: 0.5, 18747.0: 0.5, 19476.0: 0, 18774.0: 0.5, 18756.0: 0, 18532.0: 0.5, 18531.0: 0.5, 19260.0: 0, 18540.0: 0.5, 18514.0: 0.5, 18513.0: 0.5, 19242.0: 0, 18506.0: 0.5, 18507.0: 0.5, 19236.0: 0, 18750.0: 0.5, 18534.0: 0.5, 18516.0: 0.5, 18510.0: 0.5, 17050.0: 0.5, 17023.0: 0.5, 17266.0: 0.5, 17257.0: 0.5, 17260.0: 0.5, 17259.0: 0.5, 17258.0: 0.5, 17255.0: 0.5, 17263.0: 0.5, 17272.0: 0, 17264.0: 0.5, 17265.0: 0.5, 17274.0: 0, 17268.0: 0.5, 17032.0: 0.5, 17029.0: 0.5, 17030.0: 0.5, 17031.0: 0.5, 17034.0: 0.5, 17026.0: 0.5, 17017.0: 0.5, 17018.0: 0.5, 17025.0: 0.5, 17024.0: 0.5, 17015.0: 0.5, 17021.0: 0.5, 17041.0: 0.5, 17284.0: 0.5, 17281.0: 0.5, 17308.0: 0.5, 17307.0: 1.0, 17282.0: 0.5, 17283.0: 0.5, 17310.0: 0.5, 17286.0: 0.5, 17068.0: 0.5, 17065.0: 0.5, 17066.0: 0, 17067.0: 0.5, 17070.0: 0.5, 17044.0: 0.5, 17043.0: 0.5, 17042.0: 0.5, 17039.0: 0.5, 17047.0: 0.5, 17290.0: 0.5, 17289.0: 0.5, 17316.0: 0.5, 17298.0: 0, 17074.0: 0.5, 17073.0: 0.5, 17082.0: 0.5, 17056.0: 0.5, 17055.0: 0.5, 17048.0: 0.5, 17049.0: 0.5, 17292.0: 0.5, 17076.0: 0.5, 17058.0: 0.5, 17052.0: 0.5, 16564.0: 0.5, 16537.0: 0.5, 16546.0: 0, 16540.0: 0.5, 16531.0: 0.5, 16532.0: 0.5, 16539.0: 0.5, 16548.0: 0, 16538.0: 0.5, 16529.0: 0.5, 16535.0: 0.5, 16544.0: 0, 16555.0: 0.5, 16582.0: 0.5, 16579.0: 0.5, 16580.0: 0.5, 16581.0: 0.5, 16584.0: 0.5, 16558.0: 0.5, 16557.0: 0.5, 16556.0: 0.5, 16553.0: 0.5, 16561.0: 0.5, 16588.0: 0.5, 16587.0: 0.5, 16596.0: 0, 16570.0: 0, 16562.0: 0.5, 16563.0: 0.5, 16590.0: 0.5, 16572.0: 0, 16566.0: 0.5, 16348.0: 0.5, 16339.0: 0.5, 16342.0: 0.5, 16341.0: 0.5, 16340.0: 0.5, 16337.0: 0.5, 16345.0: 0.5, 16354.0: 0.5, 16353.0: 0.5, 16346.0: 0.5, 16347.0: 0.5, 16356.0: 0.5, 16350.0: 0.5, 16330.0: 0.5, 16303.0: 0.5, 16306.0: 0.5, 16305.0: 0.5, 16304.0: 0.5, 16301.0: 0.5, 16327.0: 0.5, 16328.0: 0.5, 16329.0: 0.5, 16332.0: 0.5, 16324.0: 0.5, 16297.0: 0.5, 16298.0: 0.5, 16289.0: 0.5, 16315.0: 0.5, 16316.0: 0.5, 16323.0: 0.5, 16322.0: 0.5, 16295.0: 0.5, 16313.0: 0.5, 16319.0: 0.5, 16375.0: 0.5, 18562.0: 0.5, 18553.0: 0.5, 19282.0: 0, 18796.0: 0.5, 18793.0: 0.5, 19522.0: 0, 18874.0: 0.5, 18873.0: 1.0, 18794.0: 0.5, 18795.0: 0.5, 19524.0: 0, 18876.0: 0.5, 18798.0: 0.5, 18634.0: 0.5, 18631.0: 0.5, 19360.0: 0, 18632.0: 0, 18633.0: 0.5, 19362.0: 0, 18636.0: 0, 18556.0: 0.5, 18555.0: 0.5, 19284.0: 0, 18554.0: 0.5, 18551.0: 0.5, 19280.0: 0, 18559.0: 0.5, 19288.0: 0, 18802.0: 0.5, 18801.0: 0.5, 19530.0: 0, 18882.0: 0.5, 18810.0: 0, 18640.0: 0.5, 18639.0: 0.5, 19368.0: 0, 18648.0: 0.5, 18568.0: 0.5, 18567.0: 0.5, 19296.0: 0, 18

560.0: 0.5, 18561.0: 0.5, 19290.0: 0, 18804.0: 0.5, 18642.0: 0.5, 18570.0: 0.5, 18564.0: 0.5, 17104.0: 0.5, 17095.0: 0.5, 17338.0: 0.5, 17335.0: 0.5, 17416.0: 0.5, 17415.0: 1.0, 17336.0: 0.5, 17337.0: 0.5, 17418.0: 0.5, 17340.0: 0.5, 17176.0: 0.5, 17173.0: 0.5, 17174.0: 0, 17175.0: 0.5, 17178.0: 0.5, 17098.0: 0.5, 17097.0: 0.5, 17096.0: 0.5, 17093.0: 0.5, 17101.0: 0.5, 17344.0: 0.5, 17343.0: 0.5, 17424.0: 0.5, 17352.0: 0, 17182.0: 0.5, 17181.0: 0.5, 17190.0: 0, 17110.0: 0.5, 17109.0: 0.5, 17102.0: 0.5, 17103.0: 0.5, 17346.0: 0.5, 17184.0: 0.5, 17112.0: 0.5, 17106.0: 0.5, 16618.0: 0.5, 16609.0: 0.5, 16690.0: 0.5, 16687.0: 0.5, 16688.0: 0, 16689.0: 0.5, 16692.0: 0.5, 16612.0: 0.5, 16611.0: 0.5, 16610.0: 0.5, 16607.0: 0.5, 16615.0: 0.5, 16696.0: 0.5, 16695.0: 0.5, 16704.0: 0, 16624.0: 0, 16616.0: 0.5, 16617.0: 0.5, 16698.0: 0.5, 16626.0: 0, 16620.0: 0.5, 16456.0: 0.5, 16447.0: 0.5, 16450.0: 0.5, 16449.0: 0.5, 16448.0: 0, 16453.0: 0.5, 16462.0: 0.5, 16461.0: 0.5, 16454.0: 0, 16455.0: 0.5, 16464.0: 0.5, 16458.0: 0.5, 16384.0: 0.5, 16381.0: 0.5, 16382.0: 0.5, 16383.0: 0.5, 16386.0: 0.5, 16378.0: 0.5, 16369.0: 0.5, 16370.0: 0.5, 16377.0: 0.5, 16376.0: 0.5, 16367.0: 0.5, 16373.0: 0.5, 16393.0: 0.5, 18580.0: 0.5, 18577.0: 0.5, 19306.0: 0, 18820.0: 0.5, 18819.0: 1.0, 18658.0: 0.5, 18657.0: 1.0, 18604.0: 0.5, 18603.0: 1.0, 18578.0: 0.5, 18579.0: 0.5, 19308.0: 0, 18822.0: 0.5, 18660.0: 0.5, 18606.0: 0.5, 18582.0: 0.5, 17122.0: 0.5, 17119.0: 0.5, 17362.0: 0.5, 17361.0: 1.0, 17200.0: 0.5, 17199.0: 1.0, 17146.0: 0.5, 17145.0: 1.0, 17120.0: 0.5, 17121.0: 0.5, 17364.0: 0.5, 17202.0: 0.5, 17148.0: 0.5, 17124.0: 0.5, 16636.0: 0.5, 16633.0: 0.5, 16714.0: 0.5, 16713.0: 1.0, 16660.0: 0.5, 16659.0: 1.0, 16634.0: 0.5, 16635.0: 0.5, 16716.0: 0.5, 16662.0: 0.5, 16638.0: 0.5, 16474.0: 0.5, 16471.0: 0.5, 16498.0: 0.5, 16497.0: 1.0, 16472.0: 0, 16473.0: 0.5, 16500.0: 0.5, 16476.0: 0.5, 16420.0: 0.5, 16417.0: 0.5, 16418.0: 0.5, 16419.0: 0.5, 16422.0: 0.5, 16396.0: 0.5, 16395.0: 0.5, 16394.0: 0.5, 16391.0: 0.5, 16399.0: 0.5, 18586.0: 0.5, 18585.0: 0.5, 19314.0: 0, 18828.0: 0.5, 18666.0: 0.5, 18612.0: 0.5, 18594.0: 0.5, 17128.0: 0.5, 17127.0: 0.5, 17370.0: 0.5, 17208.0: 0.5, 17154.0: 0.5, 17136.0: 0.5, 16642.0: 0.5, 16641.0: 0.5, 16722.0: 0.5, 16668.0: 0.5, 16650.0: 0, 16480.0: 0.5, 16479.0: 0.5, 16506.0: 0.5, 16488.0: 0.5, 16426.0: 0.5, 16425.0: 0.5, 16434.0: 0.5, 16408.0: 0.5, 16407.0: 0.5, 16400.0: 0.5, 16401.0: 0.5, 18588.0: 0.5, 17130.0: 0.5, 16644.0: 0.5, 16482.0: 0.5, 16428.0: 0.5, 16410.0: 0.5, 16404.0: 0.5, 12028.0: 0.5, 5467.0: 0.5, 6196.0: 0.5, 5953.0: 0.5, 6034.0: 0.5, 6007.0: 0.5, 6016.0: 0, 6010.0: 0, 6008.0: 0.5, 5999.0: 1.0, 6005.0: 0.5, 6014.0: 0, 6025.0: 1.0, 6031.0: 0.5, 6058.0: 0.5, 6049.0: 1.0, 6057.0: 0.5, 6066.0: 0, 6040.0: 0, 6032.0: 0.5, 6023.0: 1.0, 6033.0: 0.5, 6060.0: 0.5, 6051.0: 1.0, 6042.0: 0, 6036.0: 0, 5980.0: 0.5, 5899.0: 0.5, 5908.0: 0.5, 5905.0: 0.5, 5906.0: 0, 5907.0: 1.0, 5902.0: 0.5, 5893.0: 1.0, 5901.0: 1.0, 5900.0: 0, 5971.0: 1.0, 5977.0: 0.5, 5986.0: 0.5, 5985.0: 0.5, 5978.0: 0, 5979.0: 0.5, 5988.0: 0.5, 5982.0: 0.5, 5973.0: 1.0, 5962.0: 0.5, 5881.0: 0.5, 5884.0: 0.5, 5857.0: 1.0, 5883.0: 1.0, 5882.0: 0.5, 5855.0: 1.0, 5879.0: 0.5, 5935.0: 0.5, 5938.0: 0.5, 5937.0: 0.5, 6018.0: 0, 5936.0: 0.5, 5933.0: 0.5, 5959.0: 0.5, 5960.0: 0.5, 5961.0: 0.5, 5964.0: 0.5, 5956.0: 0.5, 5875.0: 0.5, 5876.0: 0.5, 5849.0: 1.0, 5867.0: 1.0, 5929.0: 0.5, 5930.0: 0.5, 5921.0: 1.0, 5947.0: 1.0, 5955.0: 0.5, 5954.0: 0.5, 5873.0: 0.5, 5927.0: 0.5, 5945.0: 1.0, 5951.0: 0.5, 6115.0: 0.5, 6358.0: 0.5, 6331.0: 0.5, 6340.0: 0.5, 6337.0: 0.5, 6338.0: 0.5, 6339.0: 1.0, 6334.0: 0.5, 6325.0: 0.5, 6326.0: 0.5, 6333.0: 1.0, 6332.0: 0.5, 6323.0: 0.5, 6329.0: 0.5, 6349.0: 0.5, 6376.0: 0.5, 6373.0: 0.5, 6374.0: 0, 6375.0: 1.0, 6352.0: 0.5, 6351.0: 1.0, 6350.0: 0.5, 6347.0: 0.5, 6355.0: 0.5, 6382.0: 0.5, 6381.0: 1.0, 6364.0: 0.5, 6363.0: 1.0, 6356.0: 0.5, 6357.0: 1.0, 6142.0: 0.5, 6133.0: 0.5, 6136.0: 0.5, 6135.0: 1.0, 6134.0: 0, 6139.0: 0.5, 6148.0: 0.5, 6147.0: 1.0, 6140.0: 0, 6141.0: 1.0, 6124.0: 0.5, 6097.0: 0.5, 6100.0: 0.5, 6099.0: 1.0, 6098.0: 0.5, 6095.0: 0.5, 6121.0: 0.5, 6122.0: 0.5, 6123.0: 1.0, 6118.0: 0.5, 6091.0: 0.5, 6092.0: 0.5, 6083.0: 0.5, 6109.0: 0.5, 6110.0: 0.5, 6117.0: 1.0, 6116.0: 0.5, 6089.0: 0.5, 6107.0: 0.5, 6113.0: 0.5, 6169.0: 0.5, 6412.0: 0.5, 6403.0: 0.5, 6484.0: 0.5, 6481.0: 0.5, 6482.0: 0.5, 6483.0: 0.5, 6486.0: 0, 6406.0: 0.5, 6405.0: 0.5, 6404.0: 0.5, 6401.0: 0.5, 6409.0: 0.5, 6490.0: 0.5, 6489.0: 0.5, 6498.0: 0, 6418.0: 0.5, 6417.0: 0.5, 6410.0: 0.5, 6411.0: 0.5, 6492.0: 0.5, 6420.0: 0.5, 6414.0: 0.5, 6250.0: 0.5, 6241.0: 0.5, 6244.0: 0, 6242.0: 0.5, 6239.0: 0.5, 6247.0: 0.5, 6256.0:



0, 6248.0: 0.5, 6249.0: 0.5, 6258.0: 0, 6252.0: 0, 6178.0: 0.5, 6175.0: 0.5, 6176.0: 0.5, 6177.0: 0.5, 6180.0: 0.5, 6172.0: 0.5, 6163.0: 0.5, 6164.0: 0.5, 6171.0: 0.5, 6170.0: 0.5, 6161.0: 0.5, 6167.0: 0.5, 6187.0: 0.5, 6430.0: 0.5, 6427.0: 0.5, 6508.0: 0.5, 6507.0: 1.0, 6454.0: 0.5, 6453.0: 1.0, 6428.0: 0.5, 6429.0: 0.5, 6510.0: 0.5, 6456.0: 0.5, 6432.0: 0.5, 6268.0: 0.5, 6265.0: 0.5, 6292.0: 0.5, 6291.0: 1.0, 6266.0: 0.5, 6267.0: 0.5, 6294.0: 0.5, 6270.0: 0, 6214.0: 0.5, 6211.0: 0.5, 6212.0: 0, 6213.0: 0.5, 6216.0: 0.5, 6190.0: 0.5, 6189.0: 0.5, 6188.0: 0.5, 6185.0: 0.5, 6193.0: 0.5, 6436.0: 0.5, 6435.0: 0.5, 6516.0: 0.5, 6462.0: 0.5, 6444.0: 0.5, 6274.0: 0.5, 6273.0: 0.5, 6300.0: 0.5, 6282.0: 0, 6220.0: 0.5, 6219.0: 0.5, 6228.0: 0.5, 6202.0: 0.5, 6201.0: 0.5, 6194.0: 0.5, 6195.0: 0.5, 6438.0: 0.5, 6276.0: 0.5, 6222.0: 0.5, 6204.0: 0.5, 6198.0: 0.5, 5710.0: 0.5, 4981.0: 0.5, 5062.0: 0.5, 5035.0: 0.5, 5044.0: 0.5, 5041.0: 0.5, 5042.0: 0.5, 5043.0: 1.0, 5038.0: 0, 5036.0: 0.5, 5027.0: 0.5, 5030.0: 0, 5033.0: 0.5, 5053.0: 0.5, 5080.0: 0, 5056.0: 0, 5054.0: 0.5, 5051.0: 0.5, 5078.0: 0, 5059.0: 0.5, 5086.0: 0, 5068.0: 0.5, 5067.0: 0.5, 5094.0: 0, 5060.0: 0.5, 5061.0: 0.5, 5088.0: 0, 5070.0: 0.5, 5064.0: 0, 5008.0: 0.5, 4927.0: 0.5, 4936.0: 0.5, 4933.0: 0.5, 4934.0: 0.5, 4935.0: 1.0, 4930.0: 0.5, 4921.0: 1.0, 4929.0: 1.0, 4928.0: 0.5, 4919.0: 1.0, 4925.0: 0.5, 4999.0: 0.5, 5002.0: 0.5, 5001.0: 0.5, 5082.0: 0, 5000.0: 0.5, 4997.0: 0.5, 5005.0: 0.5, 5014.0: 0.5, 5013.0: 0.5, 5006.0: 0.5, 5007.0: 0.5, 5016.0: 0.5, 5010.0: 0.5, 4990.0: 0.5, 4909.0: 0.5, 4912.0: 0.5, 4885.0: 0.5, 4886.0: 0, 4911.0: 1.0, 4910.0: 0.5, 4883.0: 0.5, 4907.0: 0.5, 4963.0: 0.5, 4966.0: 0.5, 4965.0: 1.0, 4964.0: 0.5, 4961.0: 0.5, 4987.0: 0.5, 4988.0: 0.5, 4989.0: 0.5, 4992.0: 0.5, 4984.0: 0.5, 4903.0: 0.5, 4904.0: 0.5, 4877.0: 0.5, 4895.0: 1.0, 4957.0: 0.5, 4958.0: 0.5, 4949.0: 0.5, 4975.0: 0.5, 4976.0: 0.5, 4983.0: 0.5, 4982.0: 0.5, 4901.0: 0.5, 4955.0: 0.5, 4973.0: 0.5, 4979.0: 0.5, 5629.0: 0.5, 5656.0: 0.5, 5647.0: 0.5, 5650.0: 0.5, 5649.0: 1.0, 5648.0: 0.5, 5645.0: 0.5, 5653.0: 0.5, 5662.0: 0.5, 5661.0: 1.0, 5654.0: 0.5, 5655.0: 1.0, 5638.0: 0.5, 5611.0: 0.5, 5614.0: 0.5, 5613.0: 1.0, 5612.0: 0.5, 5609.0: 0.5, 5635.0: 0.5, 5636.0: 0.5, 5637.0: 1.0, 5632.0: 0.5, 5605.0: 0.5, 5606.0: 0.5, 5597.0: 0.5, 5623.0: 0.5, 5624.0: 0.5, 5631.0: 1.0, 5630.0: 0.5, 5603.0: 0.5, 5621.0: 0.5, 5627.0: 0.5, 5683.0: 0.5, 5764.0: 0.5, 5755.0: 0.5, 5758.0: 0, 5756.0: 0.5, 5753.0: 0.5, 5761.0: 0.5, 5770.0: 0.5, 5769.0: 0.5, 5762.0: 0.5, 5763.0: 0.5, 5772.0: 0.5, 5766.0: 0, 5692.0: 0.5, 5689.0: 0.5, 5690.0: 0.5, 5691.0: 0.5, 5694.0: 0.5, 5686.0: 0.5, 5677.0: 0.5, 5678.0: 0.5, 5685.0: 0.5, 5684.0: 0.5, 5675.0: 0.5, 5681.0: 0.5, 5701.0: 0.5, 5782.0: 0.5, 5779.0: 0.5, 5806.0: 0, 5780.0: 0.5, 5781.0: 0.5, 5808.0: 0, 5784.0: 0, 5728.0: 0.5, 5725.0: 0.5, 5726.0: 0.5, 5727.0: 0.5, 5730.0: 0.5, 5704.0: 0.5, 5703.0: 0.5, 5702.0: 0.5, 5699.0: 0.5, 5707.0: 0.5, 5788.0: 0.5, 5787.0: 0.5, 5814.0: 0, 5796.0: 0.5, 5734.0: 0.5, 5733.0: 0.5, 5742.0: 0.5, 5716.0: 0.5, 5715.0: 0.5, 5708.0: 0.5, 5709.0: 0.5, 5790.0: 0.5, 5736.0: 0.5, 5718.0: 0.5, 5712.0: 0.5, 5548.0: 0.5, 4819.0: 0.5, 4846.0: 0.5, 4603.0: 0.5, 4612.0: 0.5, 4609.0: 0.5, 4610.0: 0.5, 4611.0: 0.5, 4614.0: 0, 4606.0: 0, 4604.0: 0.5, 4595.0: 1.0, 4601.0: 0.5, 4837.0: 0.5, 4840.0: 0, 4838.0: 0.5, 4835.0: 0.5, 4843.0: 0.5, 4852.0: 0.5, 4851.0: 0.5, 4844.0: 0.5, 4845.0: 0.5, 4854.0: 0.5, 4848.0: 0, 4828.0: 0.5, 4585.0: 0.5, 4588.0: 0, 4586.0: 0.5, 4559.0: 0.5, 4562.0: 0, 4583.0: 0.5, 4801.0: 0.5, 4804.0: 0, 4802.0: 0.5, 4799.0: 0.5, 4825.0: 0.5, 4826.0: 0.5, 4827.0: 0.5, 4830.0: 0, 4822.0: 0, 4820.0: 0.5, 4577.0: 0.5, 4580.0: 0, 4793.0: 0.5, 4796.0: 0, 4811.0: 0.5, 4814.0: 0, 4817.0: 0.5, 5305.0: 0.5, 5332.0: 0.5, 5323.0: 1.0, 5329.0: 0.5, 5338.0: 0.5, 5337.0: 0.5, 5330.0: 0.5, 5321.0: 1.0, 5331.0: 0.5, 5340.0: 0.5, 5334.0: 0, 5314.0: 0.5, 5287.0: 0.5, 5290.0: 0, 5288.0: 0.5, 5285.0: 0.5, 5311.0: 0.5, 5312.0: 0.5, 5313.0: 0.5, 5316.0: 0, 5308.0: 0, 5306.0: 0.5, 5279.0: 0.5, 5282.0: 0, 5297.0: 1.0, 5303.0: 0.5, 5521.0: 0.5, 5530.0: 0.5, 5527.0: 0.5, 5528.0: 0.5, 5529.0: 0.5, 5532.0: 0, 5524.0: 0, 5522.0: 0.5, 5513.0: 0.5, 5516.0: 0, 5519.0: 0.5, 5539.0: 0.5, 5566.0: 0.5, 5563.0: 0.5, 5564.0: 0.5, 5565.0: 0.5, 5568.0: 0, 5542.0: 0, 5540.0: 0.5, 5537.0: 0.5, 5545.0: 0.5, 5572.0: 0.5, 5571.0: 0.5, 5580.0: 0.5, 5554.0: 0.5, 5553.0: 0.5, 5546.0: 0.5, 5547.0: 0.5, 5574.0: 0.5, 5556.0: 0.5, 5550.0: 0, 5494.0: 0.5, 4765.0: 0.5, 4774.0: 0.5, 4531.0: 0.5, 4534.0: 0.5, 4453.0: 0.5, 4454.0: 0, 4533.0: 0.5, 4532.0: 0.5, 4451.0: 0.5, 4529.0: 0.5, 4693.0: 0.5, 4696.0: 0.5, 4695.0: 1.0, 4694.0: 0.5, 4691.0: 0.5, 4771.0: 0.5,

4772.0: 0.5, 4773.0: 0.5, 4776.0: 0.5, 4768.0: 0.5, 4525.0: 0.5, 4526.0: 0.5,  
4445.0: 0.5, 4517.0: 1.0, 4687.0: 0.5, 4688.0: 0.5, 4679.0: 1.0, 4759.0: 0.5,  
4760.0: 0.5, 4767.0: 0.5, 4766.0: 0.5, 4523.0: 0.5, 4685.0: 0.5, 4757.0: 0.5,  
4763.0: 0.5, 5251.0: 0.5, 5260.0: 0.5, 5179.0: 0.5, 5182.0: 0.5, 5181.0: 1.0,  
5180.0: 0.5, 5177.0: 0.5, 5257.0: 0.5, 5258.0: 0.5, 5259.0: 0.5, 5262.0: 0.5,  
5254.0: 0.5, 5173.0: 0.5, 5174.0: 0.5, 5165.0: 1.0, 5245.0: 1.0, 5253.0: 0.5,  
5252.0: 0.5, 5171.0: 0.5, 5243.0: 1.0, 5249.0: 0.5, 5413.0: 0.5, 5422.0: 0.5,  
5419.0: 0.5, 5420.0: 0.5, 5421.0: 1.0, 5416.0: 0.5, 5407.0: 0.5, 5408.0: 0.5,  
5415.0: 1.0, 5414.0: 0.5, 5405.0: 0.5, 5411.0: 0.5, 5485.0: 0.5, 5488.0: 0.5,  
5487.0: 0.5, 5486.0: 0.5, 5483.0: 0.5, 5491.0: 0.5, 5500.0: 0.5, 5499.0: 0.5,  
5492.0: 0.5, 5493.0: 0.5, 5502.0: 0.5, 5496.0: 0.5, 5476.0: 0.5, 4747.0: 0.5,  
4750.0: 0.5, 4507.0: 0.5, 4508.0: 0, 4669.0: 0.5, 4670.0: 0, 4723.0: 0.5, 472  
4.0: 0, 4749.0: 0.5, 4748.0: 0.5, 4505.0: 0.5, 4667.0: 0.5, 4721.0: 0.5, 4745.  
0: 0.5, 5233.0: 0.5, 5236.0: 0.5, 5155.0: 0.5, 5156.0: 0, 5209.0: 0.5, 5210.0:  
0, 5235.0: 0.5, 5234.0: 0.5, 5153.0: 0.5, 5207.0: 0.5, 5231.0: 0.5, 5395.0: 0.  
5, 5398.0: 0.5, 5371.0: 0.5, 5372.0: 0, 5397.0: 1.0, 5396.0: 0.5, 5369.0: 0.5,  
5393.0: 0.5, 5449.0: 0.5, 5452.0: 0.5, 5451.0: 0.5, 5450.0: 0.5, 5447.0: 0.5,  
5473.0: 0.5, 5474.0: 0.5, 5475.0: 0.5, 5478.0: 0.5, 5470.0: 0.5, 4741.0: 0.5,  
4742.0: 0.5, 4499.0: 0.5, 4661.0: 0.5, 4715.0: 0.5, 4733.0: 0.5, 5227.0: 0.5,  
5228.0: 0.5, 5147.0: 0.5, 5201.0: 0.5, 5219.0: 1.0, 5389.0: 0.5, 5390.0: 0.5,  
5363.0: 0.5, 5381.0: 0.5, 5443.0: 0.5, 5444.0: 0.5, 5435.0: 0.5, 5461.0: 0.5,  
5462.0: 0.5, 5469.0: 0.5, 5468.0: 0.5, 4739.0: 0.5, 5225.0: 0.5, 5387.0: 0.5,  
5441.0: 0.5, 5459.0: 0.5, 5465.0: 0.5, 11299.0: 0.5, 11542.0: 0.5, 11461.0: 0.  
5, 11488.0: 0.5, 11479.0: 1.0, 11485.0: 0.5, 11494.0: 0.5, 11493.0: 0.45, 1148  
6.0: 0.5, 11477.0: 1.0, 11487.0: 0.5, 11496.0: 0.5, 11490.0: 0.5, 11481.0: 1.  
0, 11470.0: 0.5, 11443.0: 0.5, 11446.0: 0.5, 11445.0: 1.0, 11444.0: 0.5, 1144  
1.0: 0.5, 11467.0: 0.5, 11468.0: 0.5, 11469.0: 0.5, 11472.0: 0.5, 11464.0: 0.  
5, 11437.0: 0.5, 11438.0: 0.5, 11429.0: 1.0, 11455.0: 1.0, 11463.0: 0.5, 1146  
2.0: 0.5, 11435.0: 0.5, 11453.0: 1.0, 11459.0: 0.5, 11515.0: 0.5, 11596.0: 0.  
5, 11587.0: 0.5, 11590.0: 0, 11588.0: 0.5, 11585.0: 0.5, 11593.0: 0.5, 11602.  
0: 0.5, 11601.0: 1.0, 11594.0: 0.5, 11595.0: 1.0, 11524.0: 0.5, 11521.0: 0.5,  
11522.0: 0.5, 11523.0: 1.0, 11518.0: 0.5, 11509.0: 0.5, 11510.0: 0.5, 11517.0:  
1.0, 11516.0: 0.5, 11507.0: 0.5, 11513.0: 0.5, 11533.0: 0.5, 11614.0: 0.5, 116  
11.0: 0.5, 11638.0: 0, 11612.0: 0.5, 11613.0: 0.5, 11640.0: 0, 11616.0: 0, 115  
60.0: 0.5, 11557.0: 0.5, 11558.0: 0.5, 11559.0: 0.5, 11562.0: 0.5, 11536.0: 0.  
5, 11535.0: 0.5, 11534.0: 0.5, 11531.0: 0.5, 11539.0: 0.5, 11620.0: 0.5, 1161  
9.0: 0.5, 11646.0: 0, 11628.0: 0.5, 11566.0: 0.5, 11565.0: 0.5, 11574.0: 0.49  
5, 11548.0: 0.5, 11547.0: 0.5, 11540.0: 0.5, 11541.0: 0.5, 11622.0: 0.5, 1156  
8.0: 0.5, 11550.0: 0.5, 11544.0: 0.5, 11380.0: 0.5, 11137.0: 0.5, 11164.0: 0.  
5, 11155.0: 0.5, 11158.0: 0, 11156.0: 0.5, 11153.0: 0.5, 11161.0: 0.5, 11170.  
0: 0.5, 11169.0: 0.5, 11162.0: 0.5, 11163.0: 0.5, 11172.0: 0.5, 11166.0: 0, 11  
146.0: 0.5, 11119.0: 0.5, 11122.0: 0, 11120.0: 0.5, 11117.0: 0.5, 11143.0: 0.  
5, 11144.0: 0.5, 11145.0: 0.5, 11148.0: 0, 11140.0: 0, 11138.0: 0.5, 11111.0:  
0.5, 11114.0: 0, 11129.0: 0.5, 11132.0: 0, 11135.0: 0.5, 11353.0: 0.5, 11362.  
0: 0.5, 11359.0: 0.5, 11360.0: 0.5, 11361.0: 1.0, 11356.0: 0, 11354.0: 0.5, 11  
345.0: 0.5, 11348.0: 0, 11351.0: 0.5, 11371.0: 0.5, 11398.0: 0.5, 11395.0: 0.  
5, 11396.0: 0.5, 11397.0: 0.5, 11400.0: 0, 11374.0: 0, 11372.0: 0.5, 11369.0:  
0.5, 11377.0: 0.5, 11404.0: 0.5, 11403.0: 0.5, 11412.0: 0.5, 11386.0: 0.5, 113  
85.0: 0.5, 11378.0: 0.5, 11379.0: 0.5, 11406.0: 0.5, 11388.0: 0.5, 11382.0: 0,  
11326.0: 0.5, 11083.0: 0.5, 11092.0: 0.5, 11011.0: 0.5, 11014.0: 0.5, 11013.0:  
0.5, 11012.0: 0.5, 11009.0: 0.5, 11089.0: 0.5, 11090.0: 0.5, 11091.0: 0.5, 110  
94.0: 0.5, 11086.0: 0.5, 11005.0: 0.5, 11006.0: 0.5, 10997.0: 1.0, 11077.0: 0.  
5, 11078.0: 0.5, 11085.0: 0.5, 11084.0: 0.5, 11003.0: 0.5, 11075.0: 0.5, 1108  
1.0: 0.5, 11245.0: 0.5, 11254.0: 0.5, 11251.0: 0.5, 11252.0: 0.5, 11253.0: 0.  
5, 11256.0: 0.5, 11248.0: 0.5, 11239.0: 1.0, 11247.0: 0.5, 11246.0: 0.5, 1123  
7.0: 1.0, 11243.0: 0.5, 11317.0: 0.5, 11320.0: 0.5, 11319.0: 0.5, 11318.0: 0.  
5, 11315.0: 0.5, 11323.0: 0.5, 11332.0: 0.49995, 11331.0: 0.4995, 11324.0: 0.  
5, 11325.0: 0.5, 11334.0: 0.5, 11328.0: 0.5, 11308.0: 0.5, 11065.0: 0.5, 1106  
8.0: 0.5, 10987.0: 0.5, 10988.0: 0, 11041.0: 0.5, 11042.0: 0, 11067.0: 0.5, 11  
066.0: 0.5, 10985.0: 0.5, 11039.0: 0.5, 11063.0: 0.5, 11227.0: 0.5, 11230.0:

0.5, 11203.0: 0.5, 11204.0: 0, 11229.0: 0.5, 11228.0: 0.5, 11201.0: 0.5, 11225.0: 0.5, 11281.0: 0.5, 11284.0: 0.5, 11283.0: 1.0, 11282.0: 0.5, 11279.0: 0.5, 11305.0: 0.5, 11306.0: 0.5, 11307.0: 0.5, 11310.0: 0.5, 11302.0: 0.5, 11059.0: 0.5, 11060.0: 0.5, 10979.0: 0.5, 11033.0: 0.5, 11051.0: 0.5, 11221.0: 0.5, 11222.0: 0.5, 11195.0: 0.5, 11213.0: 1.0, 11275.0: 0.5, 11276.0: 0.5, 11267.0: 0.5, 11293.0: 0.5, 11294.0: 0.5, 11301.0: 0.5, 11300.0: 0.5, 11057.0: 0.5, 11219.0: 0.5, 11273.0: 0.5, 11291.0: 0.5, 11297.0: 0.5, 11785.0: 0.5, 12514.0: 0.5, 12433.0: 0.5, 12460.0: 0.5, 12451.0: 0.5, 12454.0: 0.5, 12453.0: 0.5, 12452.0: 0, 12457.0: 0.5, 12466.0: 0.5, 12465.0: 0.5, 12458.0: 0, 12459.0: 0.5, 12468.0: 0.5, 12462.0: 0.5, 12442.0: 0.5, 12415.0: 1.0, 12439.0: 0.5, 12440.0: 0.5, 12413.0: 1.0, 12441.0: 0.5, 12444.0: 0.5, 12417.0: 1.0, 12436.0: 0.5, 12409.0: 1.0, 12427.0: 0.5, 12428.0: 0.5, 12401.0: 1.0, 12435.0: 0.5, 12434.0: 0.5, 12407.0: 1.0, 12425.0: 0.5, 12431.0: 0.5, 12487.0: 0.5, 12568.0: 0.5, 12559.0: 0.5, 12562.0: 0, 12560.0: 0.5, 12557.0: 0.5, 19118.0: 0, 12565.0: 0.5, 12574.0: 0, 12566.0: 0.5, 12567.0: 0.5, 12576.0: 0, 12570.0: 0, 12496.0: 0.5, 12493.0: 0.5, 12494.0: 0.5, 12495.0: 0.5, 12498.0: 0.5, 12490.0: 0.5, 12481.0: 0.5, 12482.0: 0.5, 12489.0: 0.5, 12488.0: 0.5, 12479.0: 0.5, 12485.0: 0.5, 12505.0: 0.5, 12586.0: 0.5, 12583.0: 0.5, 12610.0: 0.5, 12609.0: 1.0, 12584.0: 0.5, 12585.0: 0.5, 12612.0: 0.5, 12588.0: 0, 12532.0: 0.5, 12529.0: 0.5, 12530.0: 0, 12531.0: 0.5, 12534.0: 0.5, 12508.0: 0.5, 12507.0: 0.5, 12506.0: 0.5, 12503.0: 0.5, 12511.0: 0.5, 12592.0: 0.5, 12591.0: 0.5, 12618.0: 0.5, 12600.0: 0, 12538.0: 0.5, 12537.0: 0.5, 12546.0: 0.5, 12520.0: 0.5, 12519.0: 0.5, 12512.0: 0.5, 12513.0: 0.5, 12594.0: 0.5, 12540.0: 0.5, 12522.0: 0.5, 12516.0: 0.5, 11866.0: 0.5, 11839.0: 0.5, 11848.0: 0.5, 11845.0: 0.5, 11846.0: 0.5, 11847.0: 0.5, 11850.0: 0, 11842.0: 0, 11840.0: 0.5, 11831.0: 0.5, 11834.0: 0, 11837.0: 0.5, 11857.0: 0.5, 11884.0: 0.5, 11881.0: 0.5, 11882.0: 0.5, 11883.0: 0.5, 11886.0: 0, 11860.0: 0, 11858.0: 0.5, 11855.0: 0.5, 11863.0: 0.5, 11890.0: 0.5, 11889.0: 0.5, 11898.0: 0.5, 11872.0: 0.5, 11871.0: 0.5, 11864.0: 0.5, 11865.0: 0.5, 11892.0: 0.5, 11874.0: 0.5, 11868.0: 0, 11812.0: 0.5, 11731.0: 0.5, 11740.0: 0.5, 11737.0: 0.5, 11738.0: 0.5, 11739.0: 0.5, 11742.0: 0.5, 11734.0: 0.5, 11725.0: 0.5, 11726.0: 0.5, 11733.0: 0.5, 11732.0: 0.5, 11723.0: 0.5, 11729.0: 0.5, 11803.0: 0.5, 11806.0: 0.5, 11805.0: 0.5, 11804.0: 0.5, 11801.0: 0.5, 11809.0: 0.5, 11818.0: 0.5, 11817.0: 0.5, 11810.0: 0.5, 11811.0: 0.5, 11820.0: 0.5, 11814.0: 0.5, 11794.0: 0.5, 11713.0: 0.5, 11716.0: 0.5, 11689.0: 1.0, 11715.0: 0.5, 11714.0: 0.5, 11687.0: 1.0, 11711.0: 0.5, 11767.0: 0.5, 11770.0: 0.5, 11769.0: 0.5, 11768.0: 0.5, 11765.0: 0.5, 11791.0: 0.5, 11792.0: 0.5, 11793.0: 0.5, 11796.0: 0.5, 11788.0: 0.5, 11707.0: 0.5, 11708.0: 0.5, 11681.0: 1.0, 11699.0: 0.5, 11761.0: 0.5, 11762.0: 0.5, 11753.0: 0.5, 11779.0: 0.5, 11780.0: 0.5, 11787.0: 0.5, 11786.0: 0.5, 11705.0: 0.5, 11759.0: 0.5, 11777.0: 0.5, 11783.0: 0.5, 11947.0: 0.5, 12676.0: 0.5, 12649.0: 0.5, 12892.0: 0.5, 12883.0: 0.5, 12886.0: 0.5, 12885.0: 0.5, 12884.0: 0.5, 12881.0: 0.5, 12889.0: 0.5, 12898.0: 0.5, 12897.0: 0.5, 19458.0: 0, 12890.0: 0.5, 12891.0: 0.5, 12900.0: 0.5, 12894.0: 0.5, 12658.0: 0.5, 12655.0: 0.5, 12656.0: 0.5, 12657.0: 0.5, 12660.0: 0.5, 12652.0: 0.5, 12643.0: 0.5, 12644.0: 0.5, 12651.0: 0.5, 12650.0: 0.5, 12641.0: 0.5, 12647.0: 0.5, 12667.0: 0.5, 12910.0: 0.5, 12907.0: 0.5, 12934.0: 0.5, 12933.0: 1.0, 12908.0: 0.5, 12909.0: 0.5, 12936.0: 0.5, 12912.0: 0.5, 12694.0: 0.5, 12691.0: 0.5, 12692.0: 0, 12693.0: 0.5, 12696.0: 0.5, 12670.0: 0.5, 12669.0: 0.5, 12668.0: 0.5, 12665.0: 0.5, 12673.0: 0.5, 12916.0: 0.5, 12915.0: 0.5, 12942.0: 0.5, 12924.0: 0.5, 12700.0: 0.5, 12699.0: 0.5, 12708.0: 0.5, 12682.0: 0.5, 12681.0: 0.5, 12674.0: 0.5, 12675.0: 0.5, 12918.0: 0.5, 12702.0: 0.5, 12684.0: 0.5, 12678.0: 0.5, 12190.0: 0.5, 12163.0: 0.5, 12172.0: 0.5, 12169.0: 0.5, 12170.0: 0.5, 12171.0: 0.5, 12174.0: 0.5, 12166.0: 0.5, 12157.0: 0.5, 12158.0: 0.5, 12165.0: 0.5, 12164.0: 0.5, 12155.0: 0.5, 12161.0: 0.5, 12181.0: 0.5, 12208.0: 0.5, 12205.0: 0.5, 12206.0: 0.5, 12207.0: 0.5, 12210.0: 0.5, 12184.0: 0.5, 12183.0: 0.5, 12182.0: 0.5, 12179.0: 0.5, 12187.0: 0.5, 12214.0: 0.5, 12213.0: 0.5, 12222.0: 0.5, 12196.0: 0.5, 12195.0: 0.5, 12188.0: 0.5, 12189.0: 0.5, 12216.0: 0.5, 12198.0: 0.5, 12192.0: 0.5, 11974.0: 0.5, 11965.0: 0.5, 11968.0: 0.5, 11967.0: 0.5, 11966.0: 0.5, 11963.0: 0.5, 11971.0: 0.5, 11980.0: 0.5, 11979.0: 0.5, 11972.0: 0.5, 11973.0: 0.5, 11982.0: 0.5, 11976.0: 0.5, 11956.0: 0.5, 11929.0: 0.5, 11932.0: 0.5, 11931.0: 0.

5, 11930.0: 0.5, 11927.0: 0.5, 11953.0: 0.5, 11954.0: 0.5, 11955.0: 0.5, 11958.0: 0.5, 11950.0: 0.5, 11923.0: 0.5, 11924.0: 0.5, 11915.0: 0.5, 11941.0: 0.5, 11942.0: 0.5, 11949.0: 0.5, 11948.0: 0.5, 11921.0: 0.5, 11939.0: 0.5, 11945.0: 0.5, 12001.0: 0.5, 12730.0: 0.5, 12721.0: 0.5, 12964.0: 0.5, 12961.0: 0.5, 13042.0: 0.5, 13041.0: 1.0, 12962.0: 0.5, 12963.0: 0.5, 13044.0: 0.5, 12966.0: 0.5, 12802.0: 0.5, 12799.0: 0.5, 12800.0: 0.5, 12801.0: 0.5, 12804.0: 0, 12724.0: 0.5, 12723.0: 0.5, 12722.0: 0.5, 12719.0: 0.5, 12727.0: 0.5, 12970.0: 0.5, 12969.0: 0.5, 13050.0: 0.5, 12978.0: 0.5, 12808.0: 0.5, 12807.0: 0.5, 12816.0: 0, 12736.0: 0.5, 12735.0: 0.5, 12728.0: 0.5, 12729.0: 0.5, 12972.0: 0.5, 12810.0: 0.5, 12738.0: 0.5, 12732.0: 0.5, 12244.0: 0.5, 12235.0: 0.5, 12316.0: 0.5, 12313.0: 0.5, 12314.0: 0.5, 12315.0: 0.5, 12318.0: 0, 12238.0: 0.5, 12237.0: 0.5, 12236.0: 0.5, 12233.0: 0.5, 12241.0: 0.5, 12322.0: 0.5, 12321.0: 0.5, 12330.0: 0.5, 12250.0: 0.5, 12249.0: 0.5, 12242.0: 0.5, 12243.0: 0.5, 12324.0: 0.5, 12252.0: 0.5, 12246.0: 0.5, 12082.0: 0.5, 12073.0: 0.5, 12076.0: 0, 12074.0: 0.5, 12071.0: 0.5, 12079.0: 0.5, 12088.0: 0.5, 12087.0: 0.5, 12080.0: 0.5, 12081.0: 0.5, 12090.0: 0.5, 12084.0: 0, 12010.0: 0.5, 12007.0: 0.5, 12008.0: 0.5, 12009.0: 0.5, 12012.0: 0.5, 12004.0: 0.5, 11995.0: 0.5, 11996.0: 0.5, 12003.0: 0.5, 12002.0: 0.5, 11993.0: 0.5, 11999.0: 0.5, 12019.0: 0.5, 12748.0: 0.5, 12745.0: 0.5, 12988.0: 0.5, 12987.0: 1.0, 12826.0: 0.5, 12825.0: 1.0, 12772.0: 0.5, 12771.0: 1.0, 12746.0: 0.5, 12747.0: 0.5, 12990.0: 0.5, 12828.0: 0.5, 12774.0: 0.5, 12750.0: 0.5, 12262.0: 0.5, 12259.0: 0.5, 12340.0: 0.5, 12339.0: 1.0, 12286.0: 0.5, 12285.0: 1.0, 12260.0: 0.5, 12261.0: 0.5, 12342.0: 0.5, 12288.0: 0.5, 12264.0: 0.5, 12100.0: 0.5, 12097.0: 0.5, 12124.0: 0.5, 12123.0: 1.0, 12098.0: 0.5, 12099.0: 0.5, 12126.0: 0.5, 12102.0: 0, 12046.0: 0.5, 12043.0: 0.5, 12044.0: 0.5, 12045.0: 0.5, 12048.0: 0.5, 12022.0: 0.5, 12021.0: 0.5, 12020.0: 0.5, 12017.0: 0.5, 12025.0: 0.5, 12754.0: 0.5, 12753.0: 0.5, 12996.0: 0.5, 12834.0: 0.5, 12780.0: 0.5, 12762.0: 0.5, 12268.0: 0.5, 12267.0: 0.5, 12348.0: 0.5, 12294.0: 0.5, 12276.0: 0.5, 12106.0: 0.5, 12105.0: 0.5, 12132.0: 0.5, 12114.0: 0.5, 12052.0: 0.5, 12051.0: 0.5, 12060.0: 0.5, 12034.0: 0.5, 12033.0: 0.5, 12026.0: 0.5, 12027.0: 0.5, 12756.0: 0.5, 12270.0: 0.5, 12108.0: 0.5, 12054.0: 0.5, 12036.0: 0.5, 12030.0: 0.5, 10570.0: 0.5, 4009.0: 0.5, 4252.0: 0.5, 2065.0: 0.5, 2146.0: 0.5, 2119.0: 0.5, 2128.0: 0, 2122.0: 0.5, 2113.0: 0.5, 2114.0: 0.5, 2121.0: 0.5, 2130.0: 0, 2120.0: 0.5, 2111.0: 0.5, 2117.0: 0.5, 2126.0: 0, 2137.0: 0.5, 2164.0: 0, 2140.0: 0.5, 2139.0: 0.5, 2166.0: 0, 2138.0: 0.5, 2135.0: 0.5, 2162.0: 0, 2143.0: 0.5, 2170.0: 0, 2152.0: 0, 2144.0: 0.5, 2145.0: 0.5, 2172.0: 0, 2154.0: 0, 2148.0: 0.5, 2092.0: 0.5, 2011.0: 0.5, 2020.0: 0.5, 2017.0: 1.0, 2019.0: 1.0, 2014.0: 0.5, 2005.0: 0.5, 2006.0: 0, 2013.0: 1.0, 2012.0: 0, 2083.0: 0.5, 2086.0: 0.5, 2085.0: 0.5, 2084.0: 0, 2089.0: 0.5, 2098.0: 0.5, 2097.0: 0.5, 2178.0: 0, 2090.0: 0, 2091.0: 0.5, 2100.0: 0.5, 2094.0: 0.5, 2074.0: 0.5, 1993.0: 0.5, 1996.0: 0.5, 1969.0: 0.5, 1970.0: 0, 1995.0: 1.0, 1994.0: 0.5, 1967.0: 0.5, 1991.0: 1.0, 2047.0: 0.5, 2050.0: 0.5, 2049.0: 0.5, 2048.0: 0.5, 2045.0: 0.5, 2071.0: 0.5, 2072.0: 0.5, 2073.0: 0.5, 2076.0: 0.5, 2068.0: 0.5, 1987.0: 0.5, 1988.0: 0.5, 1961.0: 0.5, 1979.0: 0.5, 2041.0: 0.5, 2042.0: 0.5, 2033.0: 0.5, 2059.0: 0.5, 2060.0: 0.5, 2067.0: 0.5, 2066.0: 0.5, 1985.0: 0.5, 2039.0: 0.5, 2057.0: 0.5, 2063.0: 0.5, 4171.0: 0.5, 4198.0: 0.5, 4189.0: 0.5, 4192.0: 0.5, 4191.0: 1.0, 4190.0: 0, 4195.0: 0.5, 4204.0: 0.5, 4203.0: 1.0, 4196.0: 0, 4197.0: 1.0, 4180.0: 0.5, 4153.0: 0.5, 4156.0: 0.5, 4155.0: 1.0, 4154.0: 0.5, 4151.0: 0.5, 4177.0: 0.5, 4178.0: 0.5, 4179.0: 1.0, 4174.0: 0.5, 4147.0: 0.5, 4148.0: 0.5, 4139.0: 0.5, 4165.0: 0.5, 4166.0: 0.5, 4173.0: 1.0, 4172.0: 0.5, 4145.0: 0.5, 4163.0: 0.5, 4169.0: 0.5, 4225.0: 0.5, 4306.0: 0.5, 4297.0: 0.5, 4300.0: 0.5, 4299.0: 0.5, 4298.0: 0.5, 4295.0: 0.5, 4303.0: 0.5, 4312.0: 0, 4304.0: 0.5, 4305.0: 0.5, 4314.0: 0, 4308.0: 0.5, 4234.0: 0.5, 4231.0: 0.5, 4232.0: 0.5, 4233.0: 0.5, 4236.0: 0.5, 4228.0: 0.5, 4219.0: 0.5, 4220.0: 0.5, 4227.0: 0.5, 4226.0: 0.5, 4217.0: 0.5, 4223.0: 0.5, 4243.0: 0.5, 4324.0: 0.5, 4321.0: 0.5, 4348.0: 0, 4322.0: 0.5, 4323.0: 0.5, 4350.0: 0, 4326.0: 0.5, 4270.0: 0.5, 4267.0: 0.5, 4268.0: 0, 4269.0: 0.5, 4272.0: 0.5, 4246.0: 0.5, 4245.0: 0.5, 4244.0: 0.5, 4241.0: 0.5, 4249.0: 0.5, 4330.0: 0.5, 4329.0: 0.5, 4356.0: 0, 4338.0: 0, 4276.0: 0.5, 4275.0: 0.5, 4284.0: 0.5, 4258.0: 0.5, 4257.0: 0.5, 4250.0: 0.5, 4251.0: 0.5, 4332.0: 0.5, 4278.0: 0.5, 4260.0: 0.5, 4254.0: 0.5, 4090.0: 0.5, 1903.0: 0.5, 1930.

0: 0.5, 1687.0: 0.5, 1696.0: 0, 1690.0: 0.5, 1681.0: 1.0, 1689.0: 0.5, 1698.0:  
0, 1688.0: 0, 1921.0: 0.5, 1924.0: 0.5, 1923.0: 0.5, 1922.0: 0, 1927.0: 0.5, 1  
936.0: 0, 1928.0: 0, 1929.0: 0.5, 1938.0: 0, 1932.0: 0.5, 1912.0: 0, 1906.0:  
0.5, 1663.0: 0.5, 1672.0: 0, 1664.0: 0.5, 1637.0: 0.5, 1646.0: 0, 1655.0: 1.0,  
1879.0: 0.5, 1888.0: 0, 1880.0: 0.5, 1871.0: 0.5, 1897.0: 0.5, 1898.0: 0.5, 19  
05.0: 0.5, 1914.0: 0, 1904.0: 0.5, 1661.0: 0.5, 1670.0: 0, 1877.0: 0.5, 1886.  
0: 0, 1895.0: 0.5, 1901.0: 0.5, 1910.0: 0, 3847.0: 0.5, 3874.0: 0.5, 3865.0:  
1.0, 3871.0: 0.5, 3880.0: 0, 3872.0: 0, 3873.0: 0.5, 3882.0: 0, 3876.0: 0.5, 3  
867.0: 1.0, 3856.0: 0, 3850.0: 0.5, 3823.0: 0.5, 3832.0: 0, 3824.0: 0.5, 3815.  
0: 1.0, 3841.0: 1.0, 3849.0: 0.5, 3858.0: 0, 3848.0: 0.5, 3821.0: 0.5, 3830.0:  
0, 3839.0: 1.0, 3845.0: 0.5, 3854.0: 0, 4063.0: 0.5, 4072.0: 0, 4066.0: 0.5, 4  
057.0: 0.5, 4058.0: 0.5, 4065.0: 0.5, 4074.0: 0, 4064.0: 0.5, 4055.0: 0.5, 406  
1.0: 0.5, 4070.0: 0, 4081.0: 0.5, 4108.0: 0.5, 4105.0: 0.5, 4106.0: 0, 4107.0:  
0.5, 4110.0: 0.5, 4084.0: 0.5, 4083.0: 0.5, 4082.0: 0.5, 4079.0: 0.5, 4087.0:  
0.5, 4114.0: 0.5, 4113.0: 0.5, 4122.0: 0, 4096.0: 0, 4088.0: 0.5, 4089.0: 0.5,  
4116.0: 0.5, 4098.0: 0, 4092.0: 0.5, 4036.0: 0.5, 1849.0: 0.5, 1858.0: 0.5, 16  
15.0: 0.5, 1618.0: 0.5, 1537.0: 0.5, 1538.0: 0, 1617.0: 0.5, 1616.0: 0, 1777.  
0: 0.5, 1780.0: 0.5, 1779.0: 1.0, 1778.0: 0, 1855.0: 0.5, 1856.0: 0, 1857.0:  
0.5, 1860.0: 0.5, 1852.0: 0.5, 1609.0: 0.5, 1610.0: 0, 1771.0: 0.5, 1772.0: 0,  
1843.0: 0.5, 1844.0: 0, 1851.0: 0.5, 1850.0: 0, 3793.0: 0.5, 3802.0: 0.5, 372  
1.0: 0.5, 3724.0: 0.5, 3723.0: 1.0, 3722.0: 0, 3799.0: 0.5, 3800.0: 0, 3801.0:  
0.5, 3804.0: 0.5, 3796.0: 0.5, 3715.0: 0.5, 3716.0: 0, 3787.0: 1.0, 3795.0: 0.  
5, 3794.0: 0, 3955.0: 0.5, 3964.0: 0.5, 3961.0: 0.5, 3962.0: 0, 3963.0: 1.0, 3  
958.0: 0.5, 3949.0: 0.5, 3950.0: 0, 3957.0: 1.0, 3956.0: 0, 4027.0: 0.5, 4030.  
0: 0.5, 4029.0: 0.5, 4028.0: 0, 4033.0: 0.5, 4042.0: 0.5, 4041.0: 0.5, 4034.0:  
0, 4035.0: 0.5, 4044.0: 0.5, 4038.0: 0.5, 4018.0: 0.5, 1831.0: 0.5, 1834.0: 0.  
5, 1591.0: 0.5, 1592.0: 0, 1753.0: 0.5, 1754.0: 0, 1807.0: 0.5, 1808.0: 0, 183  
3.0: 0.5, 1832.0: 0.5, 1589.0: 0.5, 1751.0: 0.5, 1805.0: 0.5, 1829.0: 0.5, 377  
5.0: 0.5, 3778.0: 0.5, 3697.0: 0.5, 3698.0: 0, 3751.0: 0.5, 3752.0: 0, 3777.0:  
0.5, 3776.0: 0.5, 3695.0: 0.5, 3749.0: 0.5, 3773.0: 0.5, 3937.0: 0.5, 3940.0:  
0.5, 3913.0: 0.5, 3914.0: 0, 3939.0: 1.0, 3938.0: 0.5, 3911.0: 0.5, 3935.0: 0.  
5, 3991.0: 0.5, 3994.0: 0.5, 3993.0: 0.5, 3992.0: 0.5, 3989.0: 0.5, 4015.0: 0.  
5, 4016.0: 0.5, 4017.0: 0.5, 4020.0: 0.5, 4012.0: 0.5, 1825.0: 0.5, 1826.0: 0.  
5, 1583.0: 0.5, 1745.0: 0.5, 1799.0: 0.5, 1817.0: 0.5, 3769.0: 0.5, 3770.0: 0.  
5, 3689.0: 0.5, 3743.0: 0.5, 3761.0: 1.0, 3931.0: 0.5, 3932.0: 0.5, 3905.0: 0.  
5, 3923.0: 0.5, 3985.0: 0.5, 3986.0: 0.5, 3977.0: 0.5, 4003.0: 0.5, 4004.0: 0.  
5, 4011.0: 0.5, 4010.0: 0.5, 1823.0: 0.5, 3767.0: 0.5, 3929.0: 0.5, 3983.0: 0.  
5, 4001.0: 0.5, 4007.0: 0.5, 8383.0: 0.5, 8626.0: 0.5, 8545.0: 0.5, 8572.0: 0.  
5, 8563.0: 0.5, 8566.0: 0.5, 8565.0: 0.5, 8564.0: 0, 8569.0: 1.0, 8571.0: 0.5,  
8580.0: 0.5, 8577.0: 1.0, 8574.0: 0.5, 8554.0: 0.5, 8527.0: 0.5, 8530.0: 0.5,  
8529.0: 0.5, 8528.0: 0.5, 8525.0: 1.0, 8551.0: 1.0, 8553.0: 0.5, 8556.0: 0.5,  
8548.0: 0.5, 8521.0: 0.5, 8522.0: 0.5, 8513.0: 0.5, 8539.0: 0.5, 8540.0: 0.5,  
8547.0: 0.5, 8546.0: 0.5, 8519.0: 0.5, 8537.0: 0.5, 8543.0: 1.0, 8599.0: 0.5,  
8680.0: 0.5, 8671.0: 0.5, 8674.0: 0.5, 8673.0: 0.5, 8672.0: 0.5, 8669.0: 0.5,  
8677.0: 0.5, 8686.0: 0, 8678.0: 0.5, 8679.0: 0.5, 8688.0: 0, 8682.0: 0.5, 860  
8.0: 0.5, 8605.0: 0.5, 8606.0: 0.5, 8607.0: 0.5, 8610.0: 0.5, 8602.0: 0.5, 859  
3.0: 0.5, 8594.0: 0.5, 8601.0: 0.5, 8600.0: 0.5, 8591.0: 0.5, 8597.0: 0.5, 861  
7.0: 0.5, 8698.0: 0.5, 8695.0: 0.5, 8722.0: 0, 8696.0: 0.5, 8697.0: 0.5, 8724.  
0: 0, 8700.0: 0.5, 8644.0: 0.5, 8641.0: 0.5, 8642.0: 0, 8643.0: 0.5, 8646.0:  
0.5, 8620.0: 0.5, 8619.0: 0.5, 8618.0: 0.5, 8615.0: 0.5, 8623.0: 0.5, 8704.0:  
0.5, 8703.0: 0.5, 8730.0: 0, 8712.0: 0, 8650.0: 0.5, 8649.0: 0.5, 8658.0: 0.5,  
8632.0: 0.5, 8631.0: 0.5, 8624.0: 0.5, 8625.0: 0.5, 8706.0: 0.5, 8652.0: 0.5,  
8634.0: 0.5, 8628.0: 0.5, 8464.0: 0.5, 8221.0: 0.5, 8248.0: 0.5, 8239.0: 0.5,  
8242.0: 0.5, 8241.0: 0.5, 8240.0: 0, 8245.0: 0.5, 8254.0: 0, 8246.0: 0, 8247.  
0: 0.5, 8256.0: 0, 8250.0: 0.5, 8230.0: 0, 8224.0: 0.5, 8197.0: 0.5, 8206.0:  
0, 8198.0: 0.5, 8189.0: 0.5, 8215.0: 0.5, 8216.0: 0.5, 8223.0: 0.5, 8232.0: 0,  
8222.0: 0.5, 8195.0: 0.5, 8204.0: 0, 8213.0: 0.5, 8219.0: 0.5, 8228.0: 0, 843  
7.0: 0.5, 8446.0: 0, 8440.0: 0.5, 8431.0: 0.5, 8432.0: 0.5, 8439.0: 0.5, 8448.  
0: 0, 8438.0: 0.5, 8429.0: 0.5, 8435.0: 0.5, 8444.0: 0, 8455.0: 0.5, 8482.0:  
0.5, 8479.0: 0.5, 8480.0: 0, 8481.0: 0.5, 8484.0: 0.5, 8458.0: 0.5, 8457.0: 0.

5, 8456.0: 0.5, 8453.0: 0.5, 8461.0: 0.5, 8488.0: 0.5, 8487.0: 0.5, 8496.0: 0, 8470.0: 0, 8462.0: 0.5, 8463.0: 0.5, 8490.0: 0.5, 8472.0: 0, 8466.0: 0.5, 8410.0: 0.5, 8167.0: 0.5, 8176.0: 0.5, 8095.0: 0.5, 8098.0: 0.5, 8097.0: 0.5, 8096.0: 0, 8173.0: 0.5, 8174.0: 0, 8175.0: 0.5, 8178.0: 0.5, 8170.0: 0.5, 8089.0: 0.5, 8090.0: 0, 8161.0: 0.5, 8162.0: 0, 8169.0: 0.5, 8168.0: 0, 8329.0: 0.5, 8338.0: 0.5, 8335.0: 1.0, 8337.0: 0.5, 8340.0: 0.5, 8332.0: 0.5, 8323.0: 0.5, 8324.0: 0, 8331.0: 0.5, 8330.0: 0, 8401.0: 0.5, 8404.0: 0.5, 8403.0: 0.5, 8402.0: 0, 8407.0: 0.5, 8416.0: 0.5, 8415.0: 0.5, 8408.0: 0, 8409.0: 0.5, 8418.0: 0.5, 8412.0: 0.5, 8392.0: 0.5, 8149.0: 0.5, 8152.0: 0.5, 8071.0: 0.5, 8072.0: 0, 8125.0: 0.5, 8126.0: 0, 8151.0: 0.5, 8150.0: 0.5, 8069.0: 0.5, 8123.0: 0.5, 8147.0: 0.5, 8311.0: 0.5, 8314.0: 0.5, 8287.0: 0.5, 8288.0: 0, 8313.0: 0.5, 8312.0: 0.5, 8285.0: 0.5, 8309.0: 1.0, 8365.0: 0.5, 8368.0: 0.5, 8367.0: 0.5, 8366.0: 0.5, 8363.0: 0.5, 8389.0: 0.5, 8390.0: 0.5, 8391.0: 0.5, 8394.0: 0.5, 8386.0: 0.5, 8143.0: 0.5, 8144.0: 0.5, 8063.0: 0.5, 8117.0: 0.5, 8135.0: 0.5, 8305.0: 0.5, 8306.0: 0.5, 8279.0: 0.5, 8297.0: 0.5, 8359.0: 0.5, 8360.0: 0.5, 8351.0: 0.5, 8377.0: 0.5, 8378.0: 0.5, 8385.0: 0.5, 8384.0: 0.5, 8141.0: 0.5, 8303.0: 0.5, 8357.0: 0.5, 8375.0: 0.5, 8381.0: 0.5, 10327.0: 0.5, 10408.0: 0.5, 10381.0: 0.5, 10390.0: 0, 10384.0: 0.5, 10375.0: 0.5, 10376.0: 0.5, 10383.0: 0.5, 10392.0: 0, 10382.0: 0.5, 10373.0: 0.5, 10379.0: 0.5, 10388.0: 0, 10399.0: 0.5, 10426.0: 0.5, 10423.0: 0.5, 10424.0: 0, 10425.0: 0.5, 10428.0: 0.5, 10402.0: 0.5, 10401.0: 0.5, 10400.0: 0.5, 10397.0: 0.5, 10405.0: 0.5, 10432.0: 0.5, 10431.0: 0.5, 10440.0: 0, 10414.0: 0, 10406.0: 0.5, 10407.0: 0.5, 10434.0: 0.5, 10416.0: 0, 10410.0: 0.5, 10354.0: 0.5, 10273.0: 0.5, 10282.0: 0.5, 10279.0: 0.5, 10280.0: 0, 10281.0: 0.5, 10284.0: 0.5, 10276.0: 0.5, 10267.0: 0.5, 10268.0: 0, 10275.0: 0.5, 10274.0: 0, 10345.0: 0.5, 10348.0: 0.5, 10347.0: 0.5, 10346.0: 0, 10351.0: 0.5, 10360.0: 0.5, 10359.0: 0.5, 10352.0: 0, 10353.0: 0.5, 10362.0: 0.5, 10356.0: 0.5, 10336.0: 0.5, 10255.0: 0.5, 10258.0: 0.5, 10231.0: 1.0, 10257.0: 0.5, 10256.0: 0.5, 10229.0: 1.0, 10253.0: 0.5, 10309.0: 0.5, 10312.0: 0.5, 10311.0: 0.5, 10310.0: 0.5, 10307.0: 0.5, 10333.0: 0.5, 10334.0: 0.5, 10335.0: 0.5, 10338.0: 0.5, 10330.0: 0.5, 10249.0: 0.5, 10250.0: 0.5, 10223.0: 1.0, 10241.0: 0.5, 10303.0: 0.5, 10304.0: 0.5, 10295.0: 0.5, 10321.0: 0.5, 10322.0: 0.5, 10329.0: 0.5, 10328.0: 0.5, 10247.0: 0.5, 10301.0: 0.5, 10319.0: 0.5, 10325.0: 0.5, 10489.0: 0.5, 10732.0: 0.5, 10705.0: 0.5, 10714.0: 0.5, 10711.0: 0.5, 10712.0: 0.5, 10713.0: 0.5, 10716.0: 0.5, 10708.0: 0.5, 10699.0: 0.5, 10700.0: 0.5, 10707.0: 0.5, 10706.0: 0.5, 10697.0: 0.5, 10703.0: 0.5, 10723.0: 0.5, 10750.0: 0.5, 10747.0: 0.5, 10748.0: 0, 10749.0: 0.5, 10752.0: 0.5, 10726.0: 0.5, 10725.0: 0.5, 10724.0: 0.5, 10721.0: 0.5, 10729.0: 0.5, 10756.0: 0.5, 10755.0: 0.5, 10764.0: 0.5, 10738.0: 0.5, 10737.0: 0.5, 10730.0: 0.5, 10731.0: 0.5, 10758.0: 0.5, 10740.0: 0.5, 10734.0: 0.5, 10516.0: 0.495, 10507.0: 0.5, 10510.0: 0.5, 10509.0: 0.5, 10508.0: 0, 10513.0: 0.45, 10522.0: 0.5, 10521.0: 0.5, 10514.0: 0, 10515.0: 0.5, 10524.0: 0.5, 10518.0: 0.5, 10498.0: 0.5, 10471.0: 0.5, 10474.0: 0.5, 10473.0: 0.5, 10472.0: 0.5, 10469.0: 0.5, 10495.0: 0.5, 10496.0: 0.5, 10497.0: 0.5, 10500.0: 0.5, 10492.0: 0.5, 10465.0: 0.5, 10466.0: 0.5, 10457.0: 0.5, 10483.0: 0.5, 10484.0: 0.5, 10491.0: 0.5, 10490.0: 0.5, 10463.0: 0.5, 10481.0: 0.5, 10487.0: 0.5, 10543.0: 0.5, 10786.0: 0.5, 10777.0: 0.5, 10858.0: 0.5, 10855.0: 0.5, 10856.0: 0.5, 10857.0: 0.5, 10860.0: 0.5, 10780.0: 0.5, 10779.0: 0.5, 10778.0: 0.5, 10775.0: 0.5, 10783.0: 0.5, 10864.0: 0.5, 10863.0: 0.5, 10872.0: 0, 10792.0: 0.5, 10791.0: 0.5, 10784.0: 0.5, 10785.0: 0.5, 10866.0: 0.5, 10794.0: 0.5, 10788.0: 0.5, 10624.0: 0.5, 10615.0: 0.5, 10618.0: 0.5, 10617.0: 0.5, 10616.0: 0.5, 10613.0: 0.5, 10621.0: 0.5, 10630.0: 0, 10622.0: 0.5, 10623.0: 0.5, 10632.0: 0, 10626.0: 0.5, 10552.0: 0.5, 10549.0: 0.5, 10550.0: 0.5, 10551.0: 0.5, 10554.0: 0.5, 10546.0: 0.5, 10537.0: 0.5, 10538.0: 0.5, 10545.0: 0.5, 10544.0: 0.5, 10535.0: 0.5, 10541.0: 0.5, 10561.0: 0.5, 10804.0: 0.5, 10801.0: 0.5, 10882.0: 0.5, 10881.0: 1.0, 10828.0: 0.5, 10827.0: 1.0, 10802.0: 0.5, 10803.0: 0.5, 10884.0: 0.5, 10830.0: 0.5, 10806.0: 0.5, 10642.0: 0.5, 10639.0: 0.5, 10666.0: 0.5, 10665.0: 1.0, 10640.0: 0.5, 10641.0: 0.5, 10668.0: 0.5, 10644.0: 0.5, 10588.0: 0.5, 10585.0: 0.5, 10586.0: 0, 10587.0: 0.5, 10590.0: 0.5, 10564.0: 0.5, 10563.0: 0.5, 10562.0: 0.5, 10559.0: 0.5, 10567.0: 0.5, 10810.0: 0.5, 10809.0: 0.5, 10890.0: 0.5, 10836.0: 0.5, 10818.0: 0.5, 10648.0: 0.5, 10647.0: 0.5, 10674.0: 0.5, 106

56.0: 0, 10594.0: 0.5, 10593.0: 0.5, 10602.0: 0.5, 10576.0: 0.5, 10575.0: 0.5, 10568.0: 0.5, 10569.0: 0.5, 10812.0: 0.5, 10650.0: 0.5, 10596.0: 0.5, 10578.0: 0.5, 10572.0: 0.5, 10084.0: 0.5, 3523.0: 0.5, 3604.0: 0.5, 1417.0: 0.5, 1444.0: 0, 1426.0: 0.5, 697.0: 1.0, 1399.0: 0.5, 1402.0: 0.5, 673.0: 1.0, 1401.0: 0.5, 1400.0: 0.5, 671.0: 1.0, 1397.0: 0.5, 1423.0: 0.5, 1450.0: 0, 1424.0: 0.5, 695.0: 1.0, 1425.0: 0.5, 1452.0: 0, 1428.0: 0.5, 699.0: 1.0, 1420.0: 0.5, 691.0: 1.0, 1393.0: 0.5, 1394.0: 0.5, 665.0: 1.0, 1385.0: 0.5, 1411.0: 0.5, 1438.0: 0, 1412.0: 0.5, 683.0: 1.0, 1419.0: 0.5, 1446.0: 0, 1418.0: 0.5, 689.0: 1.0, 1391.0: 0.5, 1409.0: 0.5, 1436.0: 0, 1415.0: 0.5, 1442.0: 0, 2875.0: 0.5, 2902.0: 0, 2884.0: 0.5, 2857.0: 0.5, 2860.0: 0.5, 2859.0: 1.0, 2858.0: 0.5, 2855.0: 0.5, 2881.0: 0.5, 2908.0: 0, 2882.0: 0.5, 2883.0: 0.5, 2910.0: 0, 2886.0: 0.5, 2878.0: 0.5, 2851.0: 0.5, 2852.0: 0.5, 2843.0: 0.5, 2869.0: 0.5, 2896.0: 0, 2870.0: 0.5, 2877.0: 0.5, 2904.0: 0, 2876.0: 0.5, 2849.0: 0.5, 2867.0: 0.5, 2894.0: 0, 2873.0: 0.5, 2900.0: 0, 3577.0: 0.5, 3586.0: 0.5, 3583.0: 0.5, 3584.0: 0.5, 3585.0: 0.5, 3588.0: 0.5, 3580.0: 0.5, 3571.0: 0.5, 3572.0: 0.5, 3579.0: 0.5, 3578.0: 0.5, 3569.0: 0.5, 3575.0: 0.5, 3595.0: 0.5, 3622.0: 0, 3598.0: 0.5, 3597.0: 0.5, 3624.0: 0, 3596.0: 0.5, 3593.0: 0.5, 3620.0: 0, 3601.0: 0.5, 3628.0: 0, 3610.0: 0.5, 3609.0: 0.5, 3636.0: 0, 3602.0: 0.5, 3603.0: 0.5, 3630.0: 0, 3612.0: 0.5, 3606.0: 0.5, 3550.0: 0.5, 1363.0: 0.5, 1372.0: 0.5, 643.0: 1.0, 1291.0: 0.5, 1294.0: 0.5, 565.0: 1.0, 1293.0: 1.0, 1292.0: 0.5, 563.0: 1.0, 1289.0: 1.0, 1369.0: 0.5, 1370.0: 0.5, 641.0: 1.0, 1371.0: 0.5, 1374.0: 0.5, 645.0: 1.0, 1366.0: 0.5, 637.0: 1.0, 1285.0: 0.5, 1286.0: 0.5, 557.0: 1.0, 1277.0: 0.5, 1357.0: 0.5, 1358.0: 0.5, 629.0: 1.0, 1365.0: 0.5, 1364.0: 0.5, 635.0: 1.0, 1283.0: 0.5, 1355.0: 0.5, 1361.0: 0.5, 2821.0: 0.5, 2830.0: 0.5, 2749.0: 0.5, 2752.0: 0.5, 2751.0: 1.0, 2750.0: 0.5, 2747.0: 0.5, 2827.0: 0.5, 2828.0: 0.5, 2829.0: 0.5, 2832.0: 0.5, 2824.0: 0.5, 2743.0: 0.5, 2744.0: 0.5, 2735.0: 1.0, 2815.0: 0.5, 2816.0: 0.5, 2823.0: 0.5, 2822.0: 0.5, 2741.0: 0.5, 2813.0: 0.5, 2819.0: 0.5, 3469.0: 0.5, 3478.0: 0.5, 3475.0: 0.5, 3476.0: 0.5, 3477.0: 1.0, 3472.0: 0.5, 3463.0: 0.5, 3464.0: 0.5, 3471.0: 1.0, 3470.0: 0.5, 3461.0: 0.5, 3467.0: 0.5, 3541.0: 0.5, 3544.0: 0.5, 3543.0: 0.5, 3542.0: 0.5, 3539.0: 0.5, 3547.0: 0.5, 3556.0: 0.5, 3555.0: 0.5, 3548.0: 0.5, 3549.0: 0.5, 3558.0: 0.5, 3552.0: 0.5, 3532.0: 0.5, 1345.0: 0.5, 1348.0: 0.5, 619.0: 1.0, 1267.0: 0.5, 1268.0: 0, 1321.0: 0.5, 1322.0: 0, 1347.0: 0.5, 1346.0: 0.5, 617.0: 1.0, 1265.0: 0.5, 1319.0: 0.5, 1343.0: 0.5, 2803.0: 0.5, 2806.0: 0.5, 2725.0: 0.5, 2726.0: 0, 2779.0: 0.5, 2780.0: 0, 2805.0: 0.5, 2804.0: 0.5, 2723.0: 0.5, 2777.0: 0.5, 2801.0: 0.5, 3451.0: 0.5, 3454.0: 0.5, 3427.0: 0.5, 3428.0: 0, 3453.0: 1.0, 3452.0: 0.5, 3425.0: 0.5, 3449.0: 0.5, 3505.0: 0.5, 3508.0: 0.5, 3507.0: 0.5, 3506.0: 0.5, 3503.0: 0.5, 3529.0: 0.5, 3530.0: 0.5, 3531.0: 0.5, 3534.0: 0.5, 3526.0: 0.5, 1339.0: 0.5, 1340.0: 0.5, 611.0: 1.0, 1259.0: 0.5, 1313.0: 0.5, 1331.0: 0.5, 2797.0: 0.5, 2798.0: 0.5, 2717.0: 0.5, 2771.0: 0.5, 2789.0: 0.5, 3445.0: 0.5, 3446.0: 0.5, 3419.0: 0.5, 3437.0: 0.5, 3499.0: 0.5, 3500.0: 0.5, 3491.0: 0.5, 3517.0: 0.5, 3518.0: 0.5, 3525.0: 0.5, 3524.0: 0.5, 1337.0: 0.5, 2795.0: 0.5, 3443.0: 0.5, 3497.0: 0.5, 3515.0: 0.5, 3521.0: 0.5, 7897.0: 0.5, 7978.0: 0.5, 7249.0: 0.5, 7276.0: 0, 7258.0: 0.5, 7231.0: 0.5, 7234.0: 0.5, 7233.0: 1.0, 7232.0: 0.5, 7229.0: 0.5, 13790.0: 0, 7255.0: 0.5, 7282.0: 0, 7256.0: 0.5, 7257.0: 0.5, 7284.0: 0, 7260.0: 0.5, 7252.0: 0.5, 7225.0: 0.5, 7226.0: 0.5, 7217.0: 0.5, 7243.0: 0.5, 7270.0: 0, 7244.0: 0.5, 7251.0: 0.5, 7278.0: 0, 7250.0: 0.5, 7223.0: 0.5, 7241.0: 0.5, 7268.0: 0, 7247.0: 0.5, 7274.0: 0, 7951.0: 0.5, 7960.0: 0.5, 7957.0: 0.5, 7958.0: 0.5, 7959.0: 0.5, 7962.0: 0.5, 7954.0: 0.5, 7945.0: 0.5, 7946.0: 0.5, 7953.0: 0.5, 7952.0: 0.5, 7943.0: 0.5, 7949.0: 0.5, 7969.0: 0.5, 7996.0: 0, 7972.0: 0.5, 7971.0: 0.5, 7998.0: 0, 7970.0: 0.5, 7967.0: 0.5, 7994.0: 0, 7975.0: 0.5, 8002.0: 0, 7984.0: 0.5, 7983.0: 0.5, 8010.0: 0, 7976.0: 0.5, 7977.0: 0.5, 8004.0: 0, 7986.0: 0.5, 7980.0: 0.5, 7924.0: 0.5, 7195.0: 0.5, 7204.0: 0.5, 7123.0: 0.5, 7126.0: 0.5, 7125.0: 0.5, 7124.0: 0.5, 7121.0: 1.0, 7201.0: 0.5, 7202.0: 0.5, 7203.0: 0.5, 7206.0: 0.5, 7198.0: 0.5, 7117.0: 0.5, 7118.0: 0.5, 7109.0: 1.0, 7189.0: 0.5, 7190.0: 0.5, 7197.0: 0.5, 7196.0: 0.5, 7115.0: 0.5, 7187.0: 0.5, 7193.0: 0.5, 7843.0: 0.5, 7852.0: 0.5, 7849.0: 1.0, 7851.0: 0.5, 7854.0: 0.5, 7846.0: 0.5, 7837.0: 0.5, 7838.0: 0.5, 7845.0: 0.5, 7844.0: 0.5, 7835.0: 0.5, 7841.0: 1.0, 7915.0: 0.5, 7918.0: 0.5, 7917.0: 0.5, 7916.0: 0.5, 7913.0: 0.5, 7

921.0: 0.5, 7930.0: 0.5, 7929.0: 0.5, 7922.0: 0.5, 7923.0: 0.5, 7932.0: 0.5, 7  
926.0: 0.5, 7906.0: 0.5, 7177.0: 0.5, 7180.0: 0.5, 7099.0: 0.5, 7100.0: 0, 715  
3.0: 0.5, 7154.0: 0, 7179.0: 0.5, 7178.0: 0.5, 7097.0: 0.5, 7151.0: 0.5, 7175.  
0: 0.5, 7825.0: 0.5, 7828.0: 0.5, 7801.0: 0.5, 7802.0: 0, 7827.0: 0.5, 7826.0:  
0.5, 7799.0: 0.5, 7823.0: 1.0, 7879.0: 0.5, 7882.0: 0.5, 7881.0: 0.5, 7880.0:  
0.5, 7877.0: 0.5, 7903.0: 0.5, 7904.0: 0.5, 7905.0: 0.5, 7908.0: 0.5, 7900.0:  
0.5, 7171.0: 0.5, 7172.0: 0.5, 7091.0: 0.5, 7145.0: 0.5, 7163.0: 0.5, 7819.0:  
0.5, 7820.0: 0.5, 7793.0: 0.5, 7811.0: 0.5, 7873.0: 0.5, 7874.0: 0.5, 7865.0:  
0.5, 7891.0: 0.5, 7892.0: 0.5, 7899.0: 0.5, 7898.0: 0.5, 7169.0: 0.5, 7817.0:  
0.5, 7871.0: 0.5, 7889.0: 0.5, 7895.0: 0.5, 9355.0: 0.5, 9436.0: 0.5, 9409.0:  
0.5, 9418.0: 0.5, 9415.0: 0.5, 9416.0: 0.5, 9417.0: 1.0, 9412.0: 0.5, 9403.0:  
0.5, 9404.0: 0.5, 9411.0: 1.0, 9410.0: 0.5, 9401.0: 0.5, 9407.0: 0.5, 9427.0:  
0.5, 9454.0: 0, 9430.0: 0.5, 9429.0: 0.5, 9456.0: 0, 9428.0: 0.5, 9425.0: 0.5,  
9452.0: 0, 9433.0: 0.5, 9460.0: 0, 9442.0: 0.5, 9441.0: 0.5, 9468.0: 0, 9434.  
0: 0.5, 9435.0: 0.5, 9462.0: 0, 9444.0: 0.5, 9438.0: 0.5, 9382.0: 0.495, 9301.  
0: 0.505, 9310.0: 0.5, 9307.0: 0.5, 9308.0: 0.5, 9309.0: 0.5, 9312.0: 0.5, 930  
4.0: 0.55, 9295.0: 1.0, 9303.0: 0.5, 9302.0: 0.5, 9293.0: 1.0, 9299.0: 0.5, 93  
73.0: 0.5, 9376.0: 0.5, 9375.0: 0.5, 9374.0: 0.5, 9371.0: 0.5, 9379.0: 0.45, 9  
388.0: 0.5, 9387.0: 0.5, 9380.0: 0.5, 9381.0: 0.5, 9390.0: 0.5, 9384.0: 0.5, 9  
364.0: 0.5, 9283.0: 0.5, 9286.0: 0.5, 9259.0: 0.5, 9260.0: 0, 9285.0: 0.5, 928  
4.0: 0.5, 9257.0: 0.5, 9281.0: 0.5, 9337.0: 0.5, 9340.0: 0.5, 9339.0: 1.0, 933  
8.0: 0.5, 9335.0: 0.5, 9361.0: 0.5, 9362.0: 0.5, 9363.0: 0.5, 9366.0: 0.5, 935  
8.0: 0.5, 9277.0: 0.5, 9278.0: 0.5, 9251.0: 0.5, 9269.0: 1.0, 9331.0: 0.5, 933  
2.0: 0.5, 9323.0: 0.5, 9349.0: 0.5, 9350.0: 0.5, 9357.0: 0.5, 9356.0: 0.5, 927  
5.0: 0.5, 9329.0: 0.5, 9347.0: 0.5, 9353.0: 0.5, 10003.0: 0.5, 10030.0: 0.500  
5, 10021.0: 0.5, 10024.0: 0.5, 10023.0: 0.5, 10022.0: 0.5, 10019.0: 0.5, 1002  
7.0: 0.5, 10036.0: 0.5, 10035.0: 0.5, 10028.0: 0.5, 10029.0: 0.5, 10038.0: 0.  
5, 10032.0: 0.5, 10012.0: 0.5, 9985.0: 0.5, 9988.0: 0.5, 9987.0: 0.5, 9986.0:  
0.5, 9983.0: 0.5, 10009.0: 0.5, 10010.0: 0.5, 10011.0: 0.5, 10014.0: 0.5, 1000  
6.0: 0.5, 9979.0: 0.5, 9980.0: 0.5, 9971.0: 0.5, 9997.0: 0.5, 9998.0: 0.5, 100  
05.0: 0.5, 10004.0: 0.5, 9977.0: 0.5, 9995.0: 0.5, 10001.0: 0.5, 10057.0: 0.5,  
10138.0: 0.5, 10129.0: 0.5, 10132.0: 0.5, 10131.0: 0.5, 10130.0: 0.5, 10127.0:  
0.5, 10135.0: 0.5, 10144.0: 0.5, 10143.0: 0.5, 10136.0: 0.5, 10137.0: 0.5, 101  
46.0: 0.5, 10140.0: 0.5, 10066.0: 0.5, 10063.0: 0.5, 10064.0: 0.5, 10065.0: 0.  
5, 10068.0: 0.5, 10060.0: 0.5, 10051.0: 0.5, 10052.0: 0.5, 10059.0: 0.5, 1005  
8.0: 0.5, 10049.0: 0.5, 10055.0: 0.5, 10075.0: 0.5, 10156.0: 0.5, 10153.0: 0.  
5, 10180.0: 0, 10154.0: 0.5, 10155.0: 0.5, 10182.0: 0, 10158.0: 0.5, 10102.0:  
0.5, 10099.0: 0.5, 10100.0: 0.5, 10101.0: 0.5, 10104.0: 0.5, 10078.0: 0.5, 100  
77.0: 0.5, 10076.0: 0.5, 10073.0: 0.5, 10081.0: 0.5, 10162.0: 0.5, 10161.0: 0.  
5, 10188.0: 0, 10170.0: 0.5, 10108.0: 0.5, 10107.0: 0.45, 10116.0: 0.5, 10090.  
0: 0.5, 10089.0: 0.5, 10082.0: 0.5, 10083.0: 0.5, 10164.0: 0.5, 10110.0: 0.49  
5, 10092.0: 0.5, 10086.0: 0.5, 9922.0: 0.5, 3361.0: 0.5, 3388.0: 0.5, 1201.0:  
0.5, 1210.0: 0.5, 481.0: 1.0, 967.0: 0.5, 970.0: 0.5, 241.0: 1.0, 969.0: 0.5,  
968.0: 0.5, 239.0: 1.0, 965.0: 0.5, 1694.0: 0, 1207.0: 0.5, 1208.0: 0.5, 479.  
0: 1.0, 1209.0: 0.5, 1212.0: 0.5, 483.0: 1.0, 1204.0: 0.5, 475.0: 1.0, 961.0:  
0.5, 962.0: 0.5, 233.0: 1.0, 953.0: 1.0, 1195.0: 0.5, 1196.0: 0.5, 467.0: 1.0,  
1203.0: 0.5, 1202.0: 0.5, 473.0: 1.0, 959.0: 0.5, 1193.0: 0.5, 1199.0: 0.5, 26  
59.0: 0.5, 2668.0: 0.5, 2425.0: 0.5, 2428.0: 0.5, 2427.0: 0.5, 2426.0: 0.5, 24  
23.0: 0.5, 2665.0: 0.5, 2666.0: 0.5, 2667.0: 0.5, 2670.0: 0.5, 2662.0: 0.5, 24  
19.0: 0.5, 2420.0: 0.5, 2411.0: 1.0, 2653.0: 0.5, 2654.0: 0.5, 2661.0: 0.5, 26  
60.0: 0.5, 2417.0: 0.5, 2651.0: 0.5, 2657.0: 0.5, 3145.0: 0.5, 3154.0: 0.5, 31  
51.0: 0.5, 3152.0: 0.5, 3153.0: 0.5, 3156.0: 0.5, 3148.0: 0.5, 3139.0: 1.0, 31  
47.0: 0.5, 3146.0: 0.5, 3137.0: 1.0, 3143.0: 0.5, 3379.0: 0.5, 3382.0: 0.5, 33  
81.0: 0.5, 3380.0: 0.5, 3377.0: 0.5, 3385.0: 0.5, 3394.0: 0.5, 3393.0: 0.5, 33  
86.0: 0.5, 3387.0: 0.5, 3396.0: 0.5, 3390.0: 0.5, 3370.0: 0.5, 1183.0: 0.5, 11  
86.0: 0.5, 457.0: 1.0, 943.0: 0.5, 944.0: 0, 1159.0: 0.5, 1160.0: 0, 1185.0:  
0.5, 1184.0: 0.5, 455.0: 1.0, 941.0: 0.5, 1157.0: 0.5, 1181.0: 0.5, 2641.0: 0.  
5, 2644.0: 0.5, 2401.0: 0.5, 2402.0: 0, 2617.0: 0.5, 2618.0: 0, 2643.0: 0.5, 2  
642.0: 0.5, 2399.0: 0.5, 2615.0: 0.5, 2639.0: 0.5, 3127.0: 0.5, 3130.0: 0.5, 3  
103.0: 0.5, 3104.0: 0, 3129.0: 0.5, 3128.0: 0.5, 3101.0: 0.5, 3125.0: 0.5, 334



3.0: 0.5, 3346.0: 0.5, 3345.0: 0.5, 3344.0: 0.5, 3341.0: 0.5, 3367.0: 0.5, 336  
8.0: 0.5, 3369.0: 0.5, 3372.0: 0.5, 3364.0: 0.5, 1177.0: 0.5, 1178.0: 0.5, 44  
9.0: 1.0, 935.0: 0.5, 1151.0: 0.5, 1169.0: 0.5, 2635.0: 0.5, 2636.0: 0.5, 239  
3.0: 0.5, 2609.0: 0.5, 2627.0: 0.5, 3121.0: 0.5, 3122.0: 0.5, 3095.0: 0.5, 3113  
.0: 0.5, 3329.0: 0.5, 3355.0: 0.5, 3356.0: 0.5, 3363.0: 0.5, 3362.0: 0.5, 117  
5.0: 0.5, 2633.0: 0.5, 3119.0: 0.5, 3335.0: 0.5, 3353.0: 0.5, 3359.0: 0.5, 773  
5.0: 0.5, 7762.0: 0.5, 7033.0: 0.5, 7042.0: 0.5, 6799.0: 0.5, 6802.0: 0.5, 680  
1.0: 0.5, 6800.0: 0.5, 6797.0: 0.5, 7039.0: 0.5, 7040.0: 0.5, 7041.0: 0.5, 704  
4.0: 0.5, 7036.0: 0.5, 6793.0: 0.5, 6794.0: 0.5, 6785.0: 0.5, 7027.0: 0.5, 702  
8.0: 0.5, 7035.0: 0.5, 7034.0: 0.5, 6791.0: 0.5, 7025.0: 0.5, 7031.0: 0.5, 751  
9.0: 0.5, 7528.0: 0.5, 7525.0: 0.5, 7526.0: 0.5, 7527.0: 0.5, 7530.0: 0.5, 752  
2.0: 0.5, 7513.0: 0.5, 7514.0: 0.5, 7521.0: 0.5, 7520.0: 0.5, 7511.0: 0.5, 751  
7.0: 0.5, 7753.0: 0.5, 7756.0: 0.5, 7755.0: 0.5, 7754.0: 0.5, 7751.0: 0.5, 775  
9.0: 0.5, 7768.0: 0.5, 7767.0: 0.5, 7760.0: 0.5, 7761.0: 0.5, 7770.0: 0.5, 776  
4.0: 0.5, 7744.0: 0.5, 7015.0: 0.5, 7018.0: 0.5, 6775.0: 0.5, 6776.0: 0, 6991.  
0: 0.5, 6992.0: 0, 7017.0: 0.5, 7016.0: 0.5, 6773.0: 0.5, 6989.0: 0.5, 7013.0:  
0.5, 7501.0: 0.5, 7504.0: 0.5, 7477.0: 0.5, 7478.0: 0, 7503.0: 0.5, 7502.0: 0.  
5, 7475.0: 0.5, 7499.0: 0.5, 7717.0: 0.5, 7720.0: 0.5, 7719.0: 0.5, 7718.0: 0.  
5, 7715.0: 0.5, 7741.0: 0.5, 7742.0: 0.5, 7743.0: 0.5, 7746.0: 0.5, 7738.0: 0.  
5, 7009.0: 0.5, 7010.0: 0.5, 6767.0: 0.5, 6983.0: 0.5, 7001.0: 0.5, 7495.0: 0.  
5, 7496.0: 0.5, 7469.0: 0.5, 7487.0: 0.5, 7711.0: 0.5, 7712.0: 0.5, 7703.0: 0.  
5, 7729.0: 0.5, 7730.0: 0.5, 7737.0: 0.5, 7736.0: 0.5, 7007.0: 0.5, 7493.0: 0.  
5, 7709.0: 0.5, 7727.0: 0.5, 7733.0: 0.5, 9193.0: 0.5, 9220.0: 0.5, 8977.0: 0.  
5, 8986.0: 0.5, 8983.0: 0.5, 8984.0: 0.5, 8985.0: 0.5, 8988.0: 0.5, 8980.0: 0.  
5, 8971.0: 0.5, 8972.0: 0.5, 8979.0: 0.5, 8978.0: 0.5, 8969.0: 0.5, 8975.0: 0.  
5, 9211.0: 0.5, 9214.0: 0.5, 9213.0: 0.5, 9212.0: 0.5, 9209.0: 0.5, 9217.0: 0.  
5, 9226.0: 0.5, 9225.0: 0.5, 9218.0: 0.5, 9219.0: 0.5, 9228.0: 0.5, 9222.0: 0.  
5, 9202.0: 0.5, 8959.0: 0.5, 8962.0: 0.5, 8935.0: 0.5, 8936.0: 0, 8961.0: 0.5,  
8960.0: 0.5, 8933.0: 0.5, 8957.0: 0.5, 9175.0: 0.5, 9178.0: 0.5, 9177.0: 1.0,  
9176.0: 0.5, 9173.0: 0.5, 9199.0: 0.5, 9200.0: 0.5, 9201.0: 0.5, 9204.0: 0.5,  
9196.0: 0.5, 8953.0: 0.5, 8954.0: 0.5, 8927.0: 0.5, 8945.0: 0.5, 9169.0: 0.5,  
9170.0: 0.5, 9161.0: 0.5, 9187.0: 0.5, 9188.0: 0.5, 9195.0: 0.5, 9194.0: 0.5,  
8951.0: 0.5, 9167.0: 0.5, 9185.0: 0.5, 9191.0: 0.5, 9679.0: 0.5, 9706.0: 0.5,  
9697.0: 0.5, 9700.0: 0.5, 9699.0: 0.5, 9698.0: 0.5, 9695.0: 0.5, 9703.0: 0.5,  
9712.0: 0.5, 9711.0: 0.5, 9704.0: 0.5, 9705.0: 0.5, 9714.0: 0.5, 9708.0: 0.5,  
9688.0: 0.5, 9661.0: 0.5, 9664.0: 0.5, 9663.0: 0.5, 9662.0: 0.5, 9659.0: 0.5,  
9685.0: 0.5, 9686.0: 0.5, 9687.0: 0.5, 9690.0: 0.5, 9682.0: 0.5, 9655.0: 0.5,  
9656.0: 0.5, 9647.0: 0.5, 9673.0: 0.5, 9674.0: 0.5, 9681.0: 0.5, 9680.0: 0.5,  
9653.0: 0.5, 9671.0: 0.5, 9677.0: 0.5, 9895.0: 0.5, 9904.0: 0.5, 9901.0: 0.5,  
9902.0: 0.5, 9903.0: 0.5, 9906.0: 0.5, 9898.0: 0.5, 9889.0: 0.5, 9890.0: 0.5,  
9897.0: 0.5, 9896.0: 0.5, 9887.0: 0.5, 9893.0: 0.5, 9913.0: 0.5, 9940.0: 0.5,  
9937.0: 0.5, 9938.0: 0.5, 9939.0: 0.5, 9942.0: 0.5, 9916.0: 0.5, 9915.0: 0.5,  
9914.0: 0.5, 9911.0: 0.5, 9919.0: 0.5, 9946.0: 0.5, 9945.0: 0.5, 9954.0: 0.5,  
9928.0: 0.5, 9927.0: 0.5, 9920.0: 0.5, 9921.0: 0.5, 9948.0: 0.5, 9930.0: 0.5,  
9924.0: 0.5, 9868.0: 0.499836362929155, 3307.0: 0.4995, 3316.0: 0.5, 1129.0:  
0.5, 1132.0: 0.5, 403.0: 1.0, 889.0: 0.5, 890.0: 0, 1051.0: 0.5, 1052.0: 0, 11  
31.0: 0.5, 1130.0: 0.5, 401.0: 1.0, 887.0: 0.5, 1049.0: 0.5, 1127.0: 0.5, 258  
7.0: 0.505, 2590.0: 0.55, 2347.0: 0.5, 2348.0: 0, 2509.0: 0.5, 2510.0: 0, 258  
9.0: 0.5, 2588.0: 0.5, 2345.0: 0.5, 2507.0: 0.5, 2585.0: 0.5, 3073.0: 0.5, 307  
6.0: 0.5, 2995.0: 0.5, 2996.0: 0, 3075.0: 0.5, 3074.0: 0.5, 2993.0: 0.5, 3071.  
0: 0.5, 3235.0: 0.5, 3238.0: 0.5, 3237.0: 1.0, 3236.0: 0.5, 3233.0: 0.5, 3313.  
0: 0.5, 3314.0: 0.5, 3315.0: 0.5, 3318.0: 0.5, 3310.0: 0.5, 1123.0: 0.5, 1124.  
0: 0.5, 395.0: 1.0, 881.0: 0.5, 1043.0: 0.5, 1115.0: 0.5, 2581.0: 0.5, 2582.0:  
0.5, 2339.0: 0.5, 2501.0: 0.5, 2573.0: 0.5, 3067.0: 0.5, 3068.0: 0.5, 2987.0:  
0.5, 3059.0: 1.0, 3229.0: 0.5, 3230.0: 0.5, 3221.0: 0.5, 3301.0: 0.5, 3302.0:  
0.5, 3309.0: 0.5, 3308.0: 0.495, 1121.0: 0.5, 2579.0: 0.5, 3065.0: 0.5, 3227.  
0: 0.5, 3299.0: 0.5, 3305.0: 0.45, 7681.0: 0.5, 7690.0: 0.5, 6961.0: 0.5, 696  
4.0: 0.5, 6721.0: 0.5, 6722.0: 0, 6883.0: 0.5, 6884.0: 0, 6963.0: 0.5, 6962.0:  
0.5, 6719.0: 0.5, 6881.0: 0.5, 6959.0: 0.5, 7447.0: 0.5, 7450.0: 0.5, 7369.0:  
0.5, 7370.0: 0, 7449.0: 0.5, 7448.0: 0.5, 7367.0: 0.5, 7445.0: 0.5, 7609.0: 0.

5, 7612.0: 0.5, 7611.0: 0.5, 7610.0: 0.5, 7607.0: 1.0, 7687.0: 0.5, 7688.0: 0.  
5, 7689.0: 0.5, 7692.0: 0.5, 7684.0: 0.5, 6955.0: 0.5, 6956.0: 0.5, 6713.0: 0.  
5, 6875.0: 0.5, 6947.0: 0.5, 7441.0: 0.5, 7442.0: 0.5, 7361.0: 0.5, 7433.0: 0.  
5, 7603.0: 0.5, 7604.0: 0.5, 7595.0: 0.5, 7675.0: 0.5, 7676.0: 0.5, 7683.0: 0.  
5, 7682.0: 0.5, 6953.0: 0.5, 7439.0: 0.5, 7601.0: 0.5, 7673.0: 0.5, 7679.0: 0.  
45, 9139.0: 0.4995780885, 9148.0: 0.50049955, 8905.0: 0.5, 8908.0: 0.5, 8827.  
0: 0.5, 8828.0: 0, 8907.0: 0.5, 8906.0: 0.5, 8825.0: 0.5, 8903.0: 0.5, 9067.0:  
0.5, 9070.0: 0.5, 9069.0: 0.5, 9068.0: 0.5, 9065.0: 0.5, 9145.0: 0.499995, 914  
6.0: 0.5, 9147.0: 0.5, 9150.0: 0.5, 9142.0: 0.500005, 8899.0: 0.50005, 8900.0:  
0.5, 8819.0: 0.5, 8891.0: 0.5, 9061.0: 0.5, 9062.0: 0.5, 9053.0: 1.0, 9133.0:  
0.5, 9134.0: 0.5, 9141.0: 0.5, 9140.0: 0.5, 8897.0: 0.5, 9059.0: 0.5, 9131.0:  
0.5, 9137.0: 0.5, 9625.0: 0.5, 9634.0: 0.5, 9553.0: 0.5, 9556.0: 0.5, 9555.0:  
0.5, 9554.0: 0.5, 9551.0: 0.5, 9631.0: 0.5, 9632.0: 0.5, 9633.0: 0.5, 9636.0:  
0.5, 9628.0: 0.5, 9547.0: 0.5, 9548.0: 0.5, 9539.0: 0.5, 9619.0: 0.5, 9620.0:  
0.5, 9627.0: 0.5, 9626.0: 0.5, 9545.0: 0.5, 9617.0: 0.5, 9623.0: 0.5, 9787.0:  
0.499545, 9796.0: 0.5, 9793.0: 0.5, 9794.0: 0.5, 9795.0: 0.5, 9798.0: 0.5, 979  
0.0: 0.5, 9781.0: 0.5, 9782.0: 0.5, 9789.0: 0.5, 9788.0: 0.5, 9779.0: 0.5, 978  
5.0: 0.5, 9859.0: 0.5, 9862.0: 0.5, 9861.0: 0.5, 9860.0: 0.5, 9857.0: 0.5, 986  
5.0: 0.4995, 9874.0: 0.5, 9873.0: 0.5, 9866.0: 0.495, 9867.0: 0.4995, 9876.0:  
0.5, 9870.0: 0.5, 9850.0: 0.5, 3289.0: 0.5, 3292.0: 0.5, 1105.0: 0.5, 1106.0:  
0, 2563.0: 0.5, 2564.0: 0, 3049.0: 0.5, 3050.0: 0, 3211.0: 0.5, 3212.0: 0, 326  
5.0: 0.5, 3266.0: 0, 3291.0: 0.5, 3290.0: 0.5, 1103.0: 0.5, 2561.0: 0.5, 3047.  
0: 0.5, 3209.0: 0.5, 3263.0: 0.5, 3287.0: 0.5, 7663.0: 0.5, 7666.0: 0.5, 6937.  
0: 0.5, 6938.0: 0, 7423.0: 0.5, 7424.0: 0, 7585.0: 0.5, 7586.0: 0, 7639.0: 0.  
5, 7640.0: 0, 7665.0: 0.5, 7664.0: 0.5, 6935.0: 0.5, 7421.0: 0.5, 7583.0: 0.5,  
7637.0: 0.5, 7661.0: 0.5, 9121.0: 0.5, 9124.0: 0.5, 8881.0: 0.5, 8882.0: 0, 90  
43.0: 0.5, 9044.0: 0, 9097.0: 0.5, 9098.0: 0, 9123.0: 0.5, 9122.0: 0.5, 8879.  
0: 0.5, 9041.0: 0.5, 9095.0: 0.5, 9119.0: 0.5, 9607.0: 0.5, 9610.0: 0.5, 9529.  
0: 0.5, 9530.0: 0, 9583.0: 0.5, 9584.0: 0, 9609.0: 0.5, 9608.0: 0.5, 9527.0:  
0.5, 9581.0: 0.5, 9605.0: 0.5, 9769.0: 0.5, 9772.0: 0.5, 9745.0: 0.5, 9746.0:  
0, 9771.0: 0.5, 9770.0: 0.5, 9743.0: 0.5, 9767.0: 0.5, 9823.0: 0.5, 9826.0: 0.  
5, 9825.0: 0.5, 9824.0: 0.5, 9821.0: 0.5, 9847.0: 0.5, 9848.0: 0.5, 9849.0: 0.  
5, 9852.0: 0.5, 9844.0: 0.5, 3283.0: 0.5, 3284.0: 0.5, 1097.0: 0.5, 2555.0: 0.  
5, 3041.0: 0.5, 3203.0: 0.5, 3257.0: 0.5, 3275.0: 0.5, 7657.0: 0.5, 7658.0: 0.  
5, 6929.0: 0.5, 7415.0: 0.5, 7577.0: 0.5, 7631.0: 0.5, 7649.0: 0.5, 9115.0: 0.  
5, 9116.0: 0.5, 8873.0: 0.5, 9035.0: 0.5, 9089.0: 0.5, 9107.0: 0.5, 9601.0: 0.  
5, 9602.0: 0.5, 9521.0: 0.5, 9575.0: 0.5, 9593.0: 0.5, 9763.0: 0.5, 9764.0: 0.  
5, 9737.0: 0.5, 9755.0: 0.5, 9817.0: 0.5, 9818.0: 0.5, 9809.0: 0.5, 9835.0: 0.  
5, 9836.0: 0.5, 9843.0: 0.5, 9842.0: 0.5, 3281.0: 0.5, 7655.0: 0.5, 9113.0: 0.  
5, 9599.0: 0.5, 9761.0: 0.5, 9815.0: 0.5, 9833.0: 0.5, 9839.0: 0.5}

-----  
| 0 | 0 | 0 |

-----  
| 0 | 0 | 0 |

-----  
| 0 | 0 | 0 |  
-----

```

-----
KeyboardInterrupt                                Traceback (most recent call last)
/var/folders/tp/tgqd8prn2xlg474v7zwrqxq7r0000gn/T/ipykernel_79414/3863113020.py
in <module>
----> 1 play()

/var/folders/tp/tgqd8prn2xlg474v7zwrqxq7r0000gn/T/ipykernel_79414/1677033148.py
in play()
    345         judger = Judger(player1, player2)
    346         player2.load_policy()
--> 347         winner = judger.play()
    348         if winner == player2.symbol:
    349             print("You lose!")

/var/folders/tp/tgqd8prn2xlg474v7zwrqxq7r0000gn/T/ipykernel_79414/1677033148.py
in play(self, print_state)
    162         while True:
    163             player = next(alternator)
--> 164             i, j, symbol = player.act()
    165             next_state_hash = current_state.next_state(i, j, symbol).hash()
    166             current_state, is_end = all_states[next_state_hash]

/var/folders/tp/tgqd8prn2xlg474v7zwrqxq7r0000gn/T/ipykernel_79414/1677033148.py
in act(self)
    291     def act(self):
    292         self.state.print_state()
--> 293         key = input("Input your position:")
    294         data = self.keys.index(key)
    295         i = data // BOARD_COLS

~/opt/anaconda3/envs/pytorchenv/lib/python3.7/site-packages/ipykernel/kernelbase.py in raw_input(self, prompt)
    1179         self._parent_ident["shell"],
    1180         self.get_parent("shell"),
-> 1181         password=False,
    1182     )
    1183

~/opt/anaconda3/envs/pytorchenv/lib/python3.7/site-packages/ipykernel/kernelbase.py in _input_request(self, prompt, ident, parent, password)
    1217     except KeyboardInterrupt:
    1218         # re-raise KeyboardInterrupt, to truncate traceback
-> 1219         raise KeyboardInterrupt("Interrupted by user") from None
    1220
    1221     except Exception:
    1222         self.log.warning("Invalid Message:", exc_info=True)

KeyboardInterrupt: Interrupted by user

```

```
In [ ]: break
```

```
In [ ]: # play()
```

```
In [ ]: len(all_states.keys())
```

```
In [ ]: all_states.keys()
```

```
In [ ]: all_states[9841.0][0].data
```

```
In [ ]: all_states[16402.0][0].data
```

```
In [ ]: all_states[9575][0].data
```

```
In [ ]:
```