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//April 6th, 2020
//Int 5
//Enloe HS
//Contest #4
#include <iostream>
#include <vector>
#include <fstream>

using namespace std;

void asort(vector <int> &input) {
    int temp;
    for (int i = 0; i < input.size() - 1; i++) {
        for (int j = i + 1; j < input.size(); j++) {
            if (input[i] > input[j]) {
                temp = input[i];
                input[i] = input[j];
                input[j] = temp;
            }
        }
    }
}

bool checkprime(int input) {
    int prime[15] = {2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47};
    for (int i = 0; i < 15; i++) {
        if (input == prime[i]) {
            return true;
        }
    }
    return false;
}

bool checksquare(int input) {
    int square[5] = {9, 16, 25, 36, 49};
    for (int i = 0; i < 5; i++) {
        if (input == square[i]) {
            return true;
        }
    }
    return false;
}

bool checknine(int start, int go) {

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int astart[9] = {6, 11, 16, 21, 26, 34, 39, 44, 49};
int ago[9] = {8, 13, 18, 23, 28, 36, 41, 46, 51};
for (int i = 0; i < 9; i++) {
    if (start <= astart[i] && start + go >= ago[i]) {
        return true;
    }
}
return false;
}

void thing(vector <int> opp, vector <int> player, int r, int die[]) {

    for (int i = 0; i < r; i++) {

        bool check = false;
        for (int j = 0; j < opp.size(); j++) {
            if (player[0] + die[i] == opp[j]) {
                check = true;
            }
        }
        for (int j = 1; j < player.size(); j++) {
            if (player[0] + die[i] == player[j]) {
                check = true;
            }
        }

        if (player[0] + die[i] > 52) {
            check = true;
        }

        if (check == false) {

            player[0] += die[i];

            if (player[0] == 52) {
                player.erase(player.begin());
            }

            else if (checkprime(player[0])) {
                for (int j = 0; j < 6; j++) {
                    player[0]++;
                    for (int k = 0; k < opp.size(); k++) {
                        if (player[0] == opp[k]) {
                            player[0]--;
                        }
                    }
                }
            }
        }
    }
}

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    }
    for (int k = 1; k < player.size(); k++) {
        if (player[0] == player[k]) {
            player[0]--;
        }
    }
}

else if (checksquare(player[0])) {
    for (int j = 0; j < 6; j++) {
        player[0]--;
        for (int k = 0; k < opp.size(); k++) {
            if (player[0] == opp[k]) {
                player[0]++;
            }
        }
        for (int k = 1; k < player.size(); k++) {
            if (player[0] == player[k]) {
                player[0]++;
            }
        }
    }
}

else if (checknine(player[0] - die[i], die[i])) {
    int temp1 = player[0] - die[i];
    player[0] = player[0] - die[i] + 1;
    while (player[0] % die[i] != 0) {
        player[0]++;
    }
    for (int j = 0; j < opp.size(); j++) {
        if (player[0] == opp[j]) {
            player[0] = temp1;
        }
    }
    for (int j = 1; j < player.size(); j++) {
        if (player[0] == player[j]) {
            player[0] = temp1;
        }
    }
}

asort(opp), asort(player);

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    }  
}  
  
for (int i = 0; i < player.size(); i++) {  
    cout << player[i] << ' ';  
}  
cout << endl;  
  
}  
  
int main() {  
  
    ifstream infile("int.txt");  
  
    for (int i = 0; i < 5; i++) {  
  
        vector <int> player, opp;  
        int input, r;  
  
        for (int i = 0; i < 3; i++) {  
            infile >> input;  
            opp.push_back(input);  
        }  
        for (int i = 0; i < 3; i++) {  
            infile >> input;  
            player.push_back(input);  
        }  
  
        asort(opp), asort(player);  
        infile >> r;  
        int die[r];  
  
        for (int i = 0; i < r; i++) {  
            infile >> die[i];  
        }  
  
        thing(opp, player, r, die);  
  
    }  
  
}
```