Problem J1

Dressing Up

**Judging instructions**: There are **three** test cases, each valued at **5** points, **2** points for the proper number of lines, **2** for the proper number of "*" s, and one for structure.

Prompts for input do not need to be exactly as shown here or on the problem page.

**Input 1**

Enter Height: 5

**Output 1**

```
*     *
***   ***
********
***   ***
*     *
```

**Input 2**

Enter Height: 15

**Output 2**

```
*     *
***   ***
******  ****
********** *********
************* ********
*************  *******
*************    ******
*************        *****
*************            ****
*************                ***
*************                  *
*                   *
```

```
```
Input 3

Enter height: 21

Output 3

*                        *
***                       ***
*****                      *****
*******                    ********
*********                   *********
***********                 ***********
*************               *************
***************             ***************
*****************           *****************
*******************          *******************
************************************************
*******************          *******************
*****************           *****************
***************             ***************
*************               *************
***********                 ***********
*********                        *********
*******                            *******
*****                                *****
***                                    ***
*                                        *
Problem J2
Mod Inverse

Judging instructions: There are 5 test cases, each valued at 3 points. Prompts for input do not need to be exactly as shown here or on the problem page.

Input 1
Enter x: 4
Enter m: 17

Output 1
13

Input 2
Enter x: 6
Enter m: 10

Output 2
No such integer exists.

Input 3
Enter x: 73
Enter m: 89

Output 3
50

Input 4
Enter x: 51
Enter m: 100

Output 4
51

Input 5
Enter x: 55
Enter m: 100

Output 5
No such integer exists.
Judging instructions: There are five test cases. Each case is worth 3 points, 1 each for reporting the hand, scoring the suits, and total score. Deduct at most 2 points if the columns are not aligned. Total 15 points.

Prompts for input do not need to be exactly as shown here or on the problem page.

Input 1

Enter cards:
CD23456789TJQKAHS

Output 1

<table>
<thead>
<tr>
<th>Cards Dealt</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clubs</td>
<td>3</td>
</tr>
<tr>
<td>Diamonds 2 3 4 5 6 7 8 9 T J Q K A</td>
<td>10</td>
</tr>
<tr>
<td>Hearts</td>
<td>3</td>
</tr>
<tr>
<td>Spades</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>

Input 2

Enter cards:
CD2H34S56789TJQKA

Output 2

<table>
<thead>
<tr>
<th>Cards Dealt</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clubs</td>
<td>3</td>
</tr>
<tr>
<td>Diamonds 2</td>
<td>2</td>
</tr>
<tr>
<td>Hearts 3 4</td>
<td>1</td>
</tr>
<tr>
<td>Spades 5 6 7 8 9 T J Q K A</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16</strong></td>
</tr>
</tbody>
</table>

Input 3

Enter cards:
C23JD45QH67KS89TA

Output 3

<table>
<thead>
<tr>
<th>Cards Dealt</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clubs 2 3 J</td>
<td>1</td>
</tr>
<tr>
<td>Diamonds 4 5 Q</td>
<td>2</td>
</tr>
<tr>
<td>Hearts 6 7 K</td>
<td>3</td>
</tr>
<tr>
<td>Spades 8 9 T A</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>
### Input 4

Enter cards:
*C234D456H678S789T*

#### Output 3

<table>
<thead>
<tr>
<th>Cards Dealt</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clubs 2 3 4</td>
<td>0</td>
</tr>
<tr>
<td>Diamonds 4 5 6</td>
<td>0</td>
</tr>
<tr>
<td>Hearts 6 7 8</td>
<td>0</td>
</tr>
<tr>
<td>Spades 7 8 9 T</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

### Input 5

Enter cards:
*CJQKADQKAHQKASQKA*

#### Output 3

<table>
<thead>
<tr>
<th>Cards Dealt</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clubs J Q K A</td>
<td>10</td>
</tr>
<tr>
<td>Diamonds Q K A</td>
<td>9</td>
</tr>
<tr>
<td>Hearts Q K A</td>
<td>9</td>
</tr>
<tr>
<td>Spades Q K A</td>
<td>9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>


Problem J4S2

Spirals

Judging instructions: There are 5 test cases. Each case is worth 3 points, 1 each for starting and stopping at the correct values, and one for the spiral. Deduct at most 3 points for columns not lining up. Total 15 points.

Prompts for input do not need to be exactly as shown here or on the problem page.

Input 1

Start value: 15
End value: 15

Output 1

15

Input 2

Start value: 1
End value: 2

Output 2

1
2

Input 3

Start value: 10
End value: 25

Output 3

16 15 14 25
17 10 13 24
18 11 12 23
19 20 21 22

Input 4

Start value: 1
End value: 99

Output 4

73 72 71 70 69 68 67 66 65
74 43 42 41 40 39 38 37 64 99
75 44 21 20 19 18 17 36 63 98
76 45 22 7 6 5 16 35 62 97
77 46 23 8 1 4 15 34 61 96
78 47 24 9 2 3 14 33 60 95
79 48 25 10 11 12 13 32 59 94
80 49 26 27 28 29 30 31 58 93
81 50 51 52 53 54 55 56 57 92
82 83 84 85 86 87 88 89 90 91

Input 5

Start value: 10
End value: 31

Output 5

30 29 28 27 26
31 16 15 14 25
17 10 13 24
18 11 12 23
19 20 21 22