

```
C:\Python27>python nim.py [2,2] ab10 ab10
[2, 2]
Struct(to_move='P1', board=[2, 2])
Struct(to_move='P2', board=[1, 2])
Struct(to_move='P1', board=[1, 1])
Struct(to_move='P2', board=[0, 1])
Struct(to_move='P1', board=[0, 0])
Player 2 wins
```

```
C:\Python27>python nim.py [2,2,2] ab10 ab10
[2, 2, 2]
Struct(to_move='P1', board=[2, 2, 2])
Struct(to_move='P2', board=[0, 2, 2])
Struct(to_move='P1', board=[0, 1, 2])
Struct(to_move='P2', board=[0, 1, 1])
Struct(to_move='P1', board=[0, 0, 1])
Struct(to_move='P2', board=[0, 0, 0])
Player 1 wins
```

```
C:\Python27>python nim.py [2,2,2,3] ab10 ab10
[2, 2, 2, 3]
Struct(to_move='P1', board=[2, 2, 2, 3])
Struct(to_move='P2', board=[2, 2, 2, 2])
Struct(to_move='P1', board=[1, 2, 2, 2])
Struct(to_move='P2', board=[1, 1, 2, 2])
Struct(to_move='P1', board=[0, 1, 2, 2])
Struct(to_move='P2', board=[0, 0, 2, 2])
Struct(to_move='P1', board=[0, 0, 1, 2])
Struct(to_move='P2', board=[0, 0, 1, 1])
Struct(to_move='P1', board=[0, 0, 0, 1])
Struct(to_move='P2', board=[0, 0, 0, 0])
Player 1 wins
```

```
C:\Python27>python nim.py [2,2,2,2] ab10 ab10
[2, 2, 2, 2]
Struct(to_move='P1', board=[2, 2, 2, 2])
Struct(to_move='P2', board=[1, 2, 2, 2])
Struct(to_move='P1', board=[1, 1, 2, 2])
Struct(to_move='P2', board=[0, 1, 2, 2])
Struct(to_move='P1', board=[0, 0, 2, 2])
Struct(to_move='P2', board=[0, 0, 1, 2])
Struct(to_move='P1', board=[0, 0, 1, 1])
Struct(to_move='P2', board=[0, 0, 0, 1])
Struct(to_move='P1', board=[0, 0, 0, 0])
Player 2 wins
```

```
C:\Python27>python nim.py [2,2,2,2,3] ab10 ab10
[2, 2, 2, 2, 3]
```

```
Struct(to_move='P1', board=[2, 2, 2, 2, 3])
Struct(to_move='P2', board=[1, 2, 2, 2, 3])
Struct(to_move='P1', board=[0, 2, 2, 2, 3])
Struct(to_move='P2', board=[0, 2, 2, 2, 2])
Struct(to_move='P1', board=[0, 1, 2, 2, 2])
Struct(to_move='P2', board=[0, 1, 1, 2, 2])
Struct(to_move='P1', board=[0, 0, 1, 2, 2])
Struct(to_move='P2', board=[0, 0, 0, 2, 2])
Struct(to_move='P1', board=[0, 0, 0, 1, 2])
Struct(to_move='P2', board=[0, 0, 0, 1, 1])
Struct(to_move='P1', board=[0, 0, 0, 0, 1])
Struct(to_move='P2', board=[0, 0, 0, 0, 0])
Player 1 wins
```

```
C:\Python27>python nim.py [2,2,2,2,3,2] ab10 ab10
[2, 2, 2, 2, 3, 2]
Struct(to_move='P1', board=[2, 2, 2, 2, 3, 2])
Struct(to_move='P2', board=[2, 2, 2, 2, 2, 2])
Struct(to_move='P1', board=[1, 2, 2, 2, 2, 2])
Struct(to_move='P2', board=[1, 1, 2, 2, 2, 2])
Struct(to_move='P1', board=[0, 1, 2, 2, 2, 2])
Struct(to_move='P2', board=[0, 0, 2, 2, 2, 2])
Struct(to_move='P1', board=[0, 0, 1, 2, 2, 2])
Struct(to_move='P2', board=[0, 0, 1, 1, 2, 2])
Struct(to_move='P1', board=[0, 0, 0, 1, 2, 2])
Struct(to_move='P2', board=[0, 0, 0, 0, 2, 2])
Struct(to_move='P1', board=[0, 0, 0, 0, 1, 2])
Struct(to_move='P2', board=[0, 0, 0, 0, 1, 1])
Struct(to_move='P1', board=[0, 0, 0, 0, 0, 1])
Struct(to_move='P2', board=[0, 0, 0, 0, 0, 0])
Player 1 wins
```

```
C:\Python27>python nim.py [4,4,2] ab10 ab10
[4, 4, 2]
Struct(to_move='P1', board=[4, 4, 2])
Struct(to_move='P2', board=[4, 4, 0])
Struct(to_move='P1', board=[3, 4, 0])
Struct(to_move='P2', board=[3, 3, 0])
Struct(to_move='P1', board=[2, 3, 0])
Struct(to_move='P2', board=[2, 2, 0])
Struct(to_move='P1', board=[1, 2, 0])
Struct(to_move='P2', board=[1, 1, 0])
Struct(to_move='P1', board=[0, 1, 0])
Struct(to_move='P2', board=[0, 0, 0])
Player 1 wins
```

```
C:\Python27>python nim.py [3,5,5] ab10 ab10
[3, 5, 5]
Struct(to_move='P1', board=[3, 5, 5])
```

```
Struct(to_move='P2', board=[0, 5, 5])
Struct(to_move='P1', board=[0, 4, 5])
Struct(to_move='P2', board=[0, 4, 4])
Struct(to_move='P1', board=[0, 3, 4])
Struct(to_move='P2', board=[0, 3, 3])
Struct(to_move='P1', board=[0, 2, 3])
Struct(to_move='P2', board=[0, 2, 2])
Struct(to_move='P1', board=[0, 1, 2])
Struct(to_move='P2', board=[0, 1, 1])
Struct(to_move='P1', board=[0, 0, 1])
Struct(to_move='P2', board=[0, 0, 0])
Player 1 wins
```

```
C:\Python27>
```