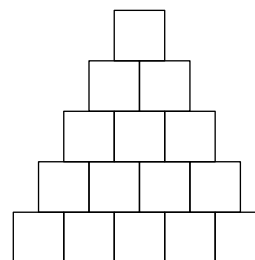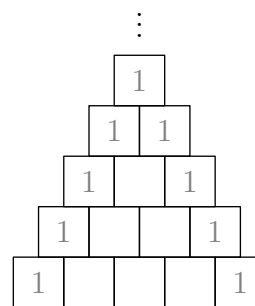# PASCAL'S TRIANGLE - BREAK THE RULES

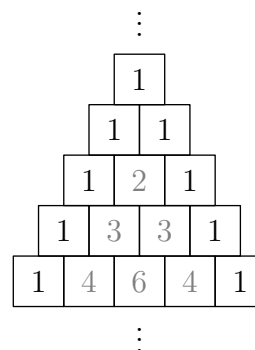Pascal's Triangle follows some very simple rules:

1) Start with a triangle of boxes:

2) Fill in the sides of the triangle with 1's:

3) Add the numbers in two adjacent boxes and fill it in the box below the two:
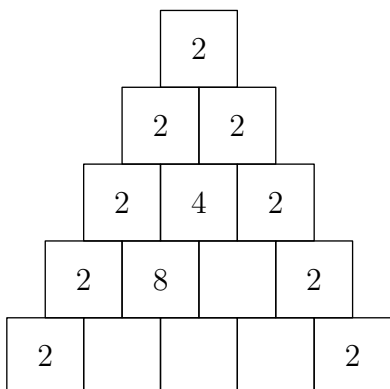
What happens if we change these rules?
(1) What happens when we change the addition rule?
(2) What happens when we use different numbers on the sides of the triangle?
(3) What happens if we use a shape that isn't a triangle?
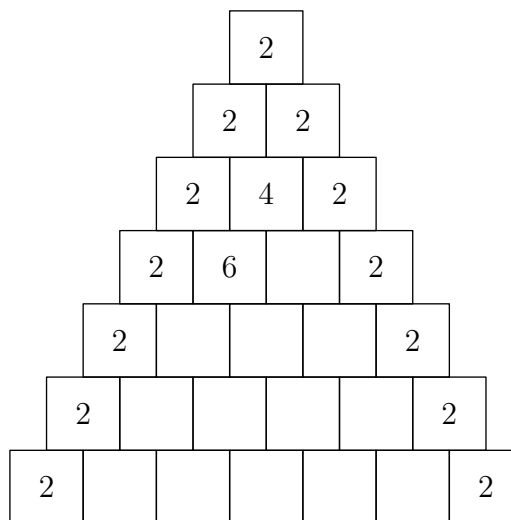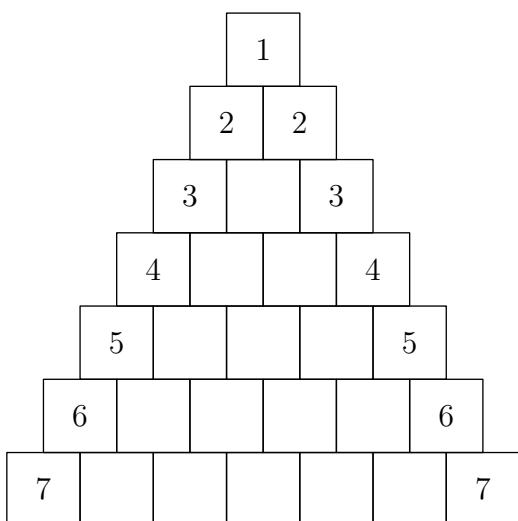
Look on the back of the page for some ideas.

Break the Rules!

Can you fill in the triangles? What other ways can you think of to change the rules? Use some blank triangles (or squares!) to test out your ideas. What patterns can you find?
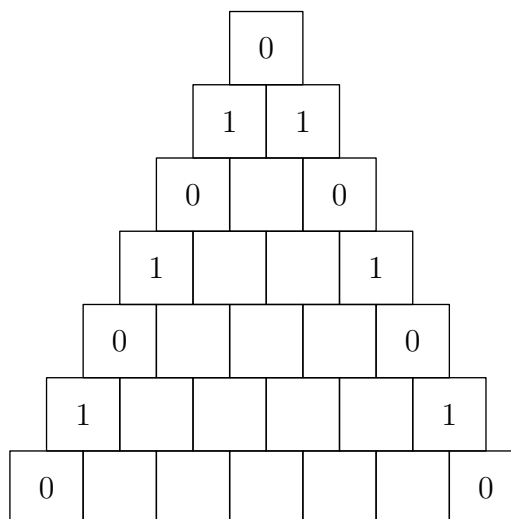
In this triangle, there are 2's down the sides. Try to use the same addition rule.

```
            2
          2   2
        2   4   2
      2   6       2
    2               2
  2                   2
2                       2
```

In this triangle, try to use multiplication instead of addition.

```
        2
      2   2
    2   4   2
  2   8       2
2               2
```

Here is a different sequence of numbers down the side. Try using the addition rule.

```
            0
          1   1
        0       0
      1           1
    0               0
  1                   1
0                       0
```

Use either the addition rule or the multiplication rule, or invent your own!

```
            1
          2   2
        3       3
      4           4
    5               5
  6                   6
7                       7
```