Note: Submission of solutions to challenge problems is purely voluntary. Submitting correct solutions could raise your grade but not submitting will not lower your grade. Please see class website for more information on Challenge Problem marking

Question: Here are rows 0-7 of Pascal's triangle.

```
                      1
                   1     1
                1     2     1
             1     3     3     1
          1     4     6     4     1
       1     5    10    10     5     1
    1     6    15    20    15     6     1
 1     7    21    35    35    21     7     1
```

Observe that
- The number at row 0 is 1, which is 11^0.
- If we make a number by using each number on row 1 as a digit, we get 11.
- If we make a number by using each number on row 2 as a digit, we get 121, which is 11^2.
- If we make a number by using each number on row 3 as a digit, we get 1331, which is 11^3.
- If we make a number by using each number on row 4 as a digit, we get 14641, which is 11^4.

(a) Can you explain this phenomenon?
(b) Can you relate the numbers on row i (i>4) to the digits in 11^i?