

Euler 0015

The Problem:

How many paths can you take if you just walk through a grid by only moving down and right?
We are looking for 20x20. 2x2 has a given value of 6.

Considerations:

As it turns out, this is just the max value of all the odd layers of pascal's triangle.

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
```

The Approach:

So if we generate 41 rows of pascal then we can take the max value and that is the answer.

The Code:

```
pascal_rows = 41

def generate_pascals_last_row(rows):
    last_row = [1]
    #we have already generated row 1
    for i in range(rows-1):
        #take the first number (hint, it's 1)
        current_row = [1]
```

```
#add up all the numbers and put them in between
for j in range(0, len(last_row) - 1):
    current_row += [last_row[j] + last_row[j+1]]

#take the last number (hint, it's 1)
current_row += [1]
last_row = current_row

return last_row

print(max(generate_pascals_last_row(pascal_rows)))
```

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