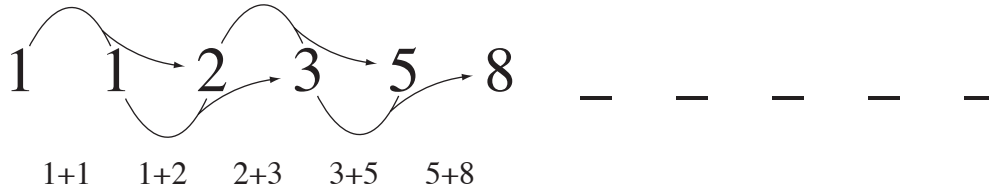


# MathFLIX CHALLENGE

## Number Patterns: Fibonacci Sequence

Leonardo Pisano Fibonacci was a mathematician who lived from 1170 to 1250. For a while, he worked extensively with a special sequence of numbers that became known as the Fibonacci sequence. Continue the pattern below to find more Fibonacci numbers.



Now let's see some other patterns that we can get using the Fibonacci

### PATTERN #1

This many Fibonacci #'s ...means this sequence ...which equals what?

*Hint: Another way to find the sum, add the last number of two consecutive lines and subtract 1*

2	1 + 1	2
3	1 + 1 + 2	4
4	1 + 1 + 2 + 3	7
5	1 + 1 + 2 + 3 + 5	12
6		
7		
8		
9		
10		

### Square and add the Fibonacci numbers...

...to get this sum

$1^2 + 1^2$	= 2
$1^2 + 1^2 + 2^2$	= 6
$1^2 + 1^2 + 2^2 + 3^2$	= 15
$1^2 + 1^2 + 2^2 + 3^2 + 5^2$	= _____
$1^2 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2$	= _____
$1^2 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2 + 13^2$	= _____
$1^2 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2 + 13^2 + 21^2$	= _____
$1^2 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2 + 13^2 + 21^2 + 34^2$	= _____
$1^2 + 1^2 + 2^2 + 3^2 + 5^2 + 8^2 + 13^2 + 21^2 + 34^2 + 55^2$	= _____

### PATTERN #2

**Remember:**

$$1^2 = 1 \times 1$$

$$2^2 = 2 \times 2$$

$$3^2 = 3 \times 3...$$