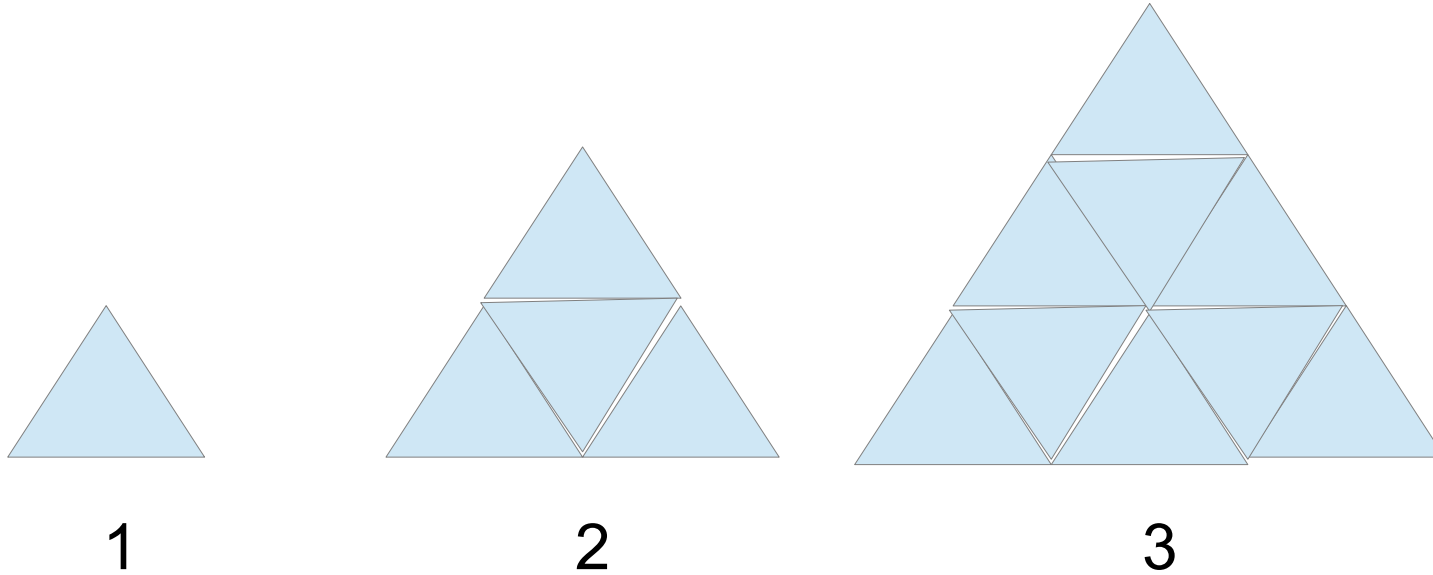


“The children now love luxury. They have bad manners, contempt for authority; they show disrespect for elders and love chatter in place of exercise.”

“[It] destroys memory and weakens the mind,
relieving it of work that makes it strong.
It is an inhuman thing.”

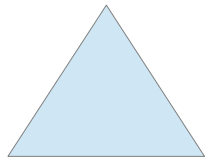


What are some conjectures you can make about this pattern?

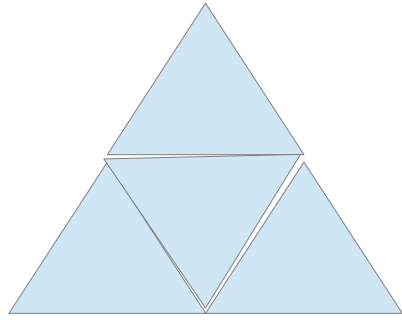
CONJECTURE 1:

The bottom row of triangles has an ODD number of triangles
-- the first 3 figures in the example have ODD numbers

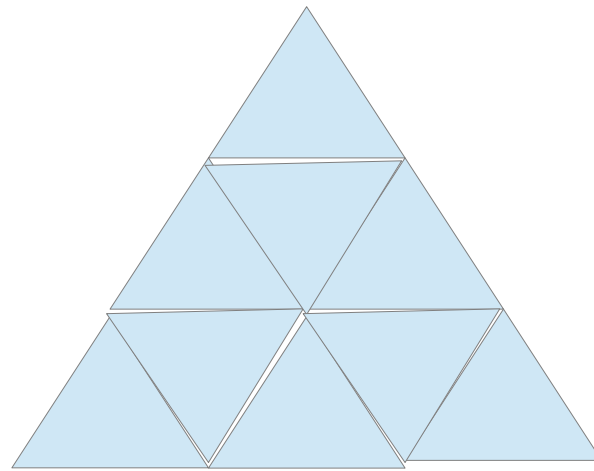
(is 3 examples enough to convince? The number of examples
Is NOT as important as the diversity of examples)



1



2



3

The bottom row of triangles has an ODD number of triangles

-- is there a better way to convince this conjecture is ALWAYS true

Talk about a pattern?

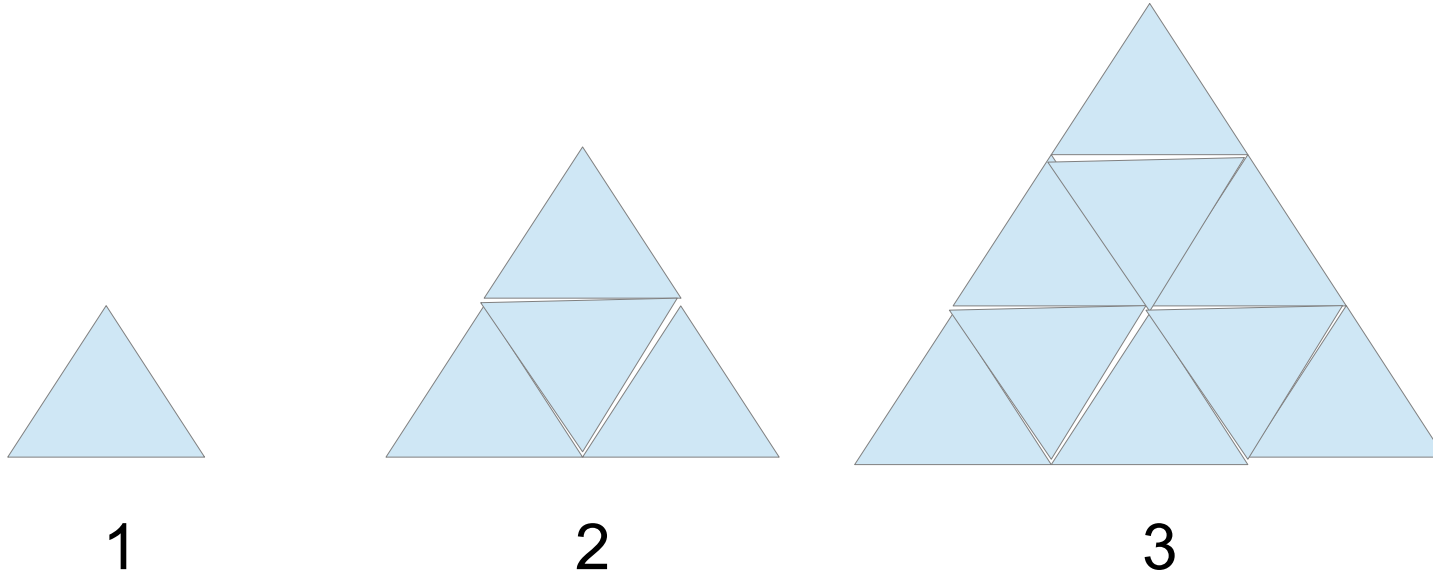
-- add a new bottom row with two more triangles

To prove the conjecture:

-- the first figure has 1 triangle on the bottom row (odd number)

-- the pattern of the figures is to ADD an new row on the bottom with TWO more triangles

-- the number on the bottom row will remain ODD ($\text{ODD} + 2 = \text{ODD}$)



What are some conjectures you can make about this pattern?

CONJECTURE 2:

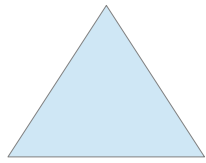
-- The tenth figure of this pattern will have 100 triangles

I got this conjecture because I noticed that the number of
Triangles was related to the figure number

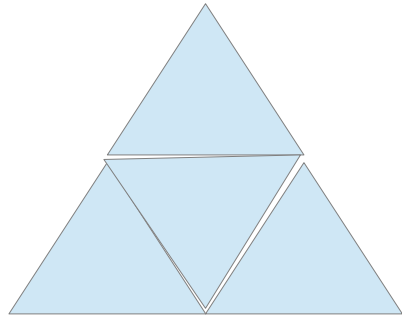
Figure 1 --> $1^2 = 1$

Figure 10 --> $10^2 = 100$

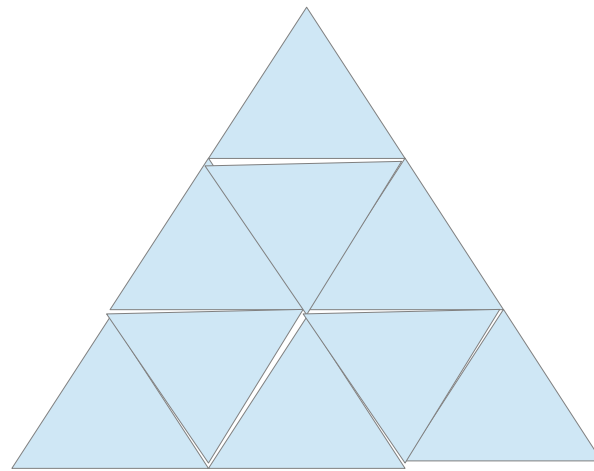
Figure 2 --> $2^2 = 4$



1



2



3

Instead of drawing the 10th figure, let's see if we can convince Ourselves by describing the pattern.

CONJECTURE 2:

-- The tenth figure of this pattern will have 100 triangles

Figure #	1	2	3	4	5	6	7	8	9	10
# of triangles	1	4	9	9 + 7 = 16						

2 * the number of rows
+ 1 on the very top

We have shown two examples of using
INDUCTIVE reasoning:

- Using examples to support your conjectures
- The more examples the better but not necessarily convincing enough
- The variety of examples is more important than the number of examples
- Trying to move away from examples and into logical truths