

New Concepts

- Inductive Reasoning

Problem Set #17

“Induction makes you feel guilty for getting something out of nothing, and it is artificial, but it is one of the greatest ideas of civilization. It is very hard to teach, but WE are TEACHERS.”

- Herbert Wilf

New Postulates and Theorems

Exercises:

p.107 #1-9, 15-26, 29

Problems:

17-1 Counting Triangles

How many triangles “that point up” are in an $N \times N \times N$ triangle,

When $N = 1$?

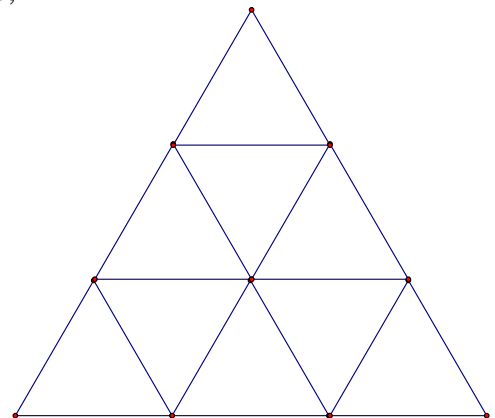
When $N = 2$?

When $N = 3$?

When $N = 4$?

When $N = 5$?

Can you inductively predict $N = 6, 7, \text{ or } 10$?



an example of $N = 3$