

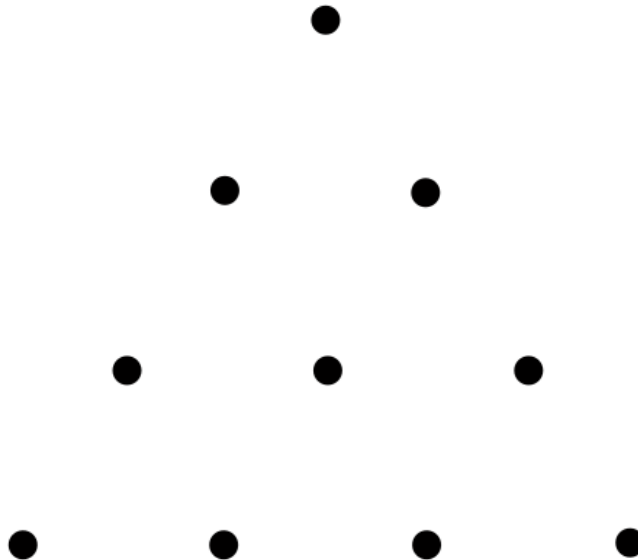
Puzzle of the Week

Avoiding Triangles

A *regular triangle* is a triangle with equal sides and equal angles. In this first pyramid, two regular triangles have been made using the dots. In the second pyramid, enough dots have been crossed out that it is impossible to find three dots that form a regular triangle.



THE CHALLENGE: What is the fewest number of dots you can remove from this pyramid so that there are no equilateral triangles of any size or orientation formed by the dots?



EXPLORATION: Can you cross out fewer dots than the introductory example to solve the six-dot pyramid? Do you see a pattern of solutions that would suggest solutions for larger pyramids?

Puzzle of the Week

Avoiding Triangles – Notes

THE CHALLENGE: I feel comfortable that the solutions for 6-dot and 10-dot pyramids offered below are as good as possible. The designs offered are simple to understand and seem to produce a pattern of solutions.

For pyramids with 15 or more dots, it is not at all obvious that this pattern will continue to be the best possible way of doing it. Please let us know if you find any improvements.

