

Let  $h$  be the maximum number of penny-to-penny connections on the vertices of a hexagonal lattice, and let  $t(n)$  be the analogous sequence on the vertices of a triangular lattice.

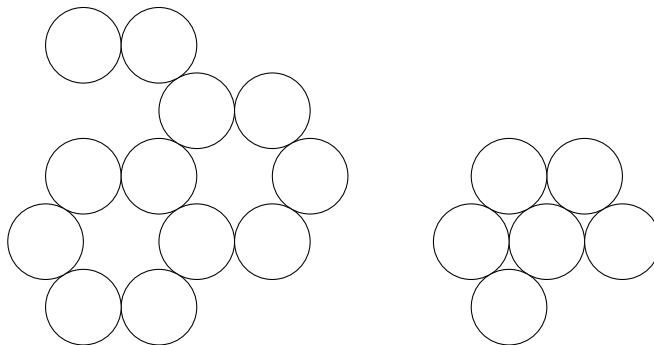


Figure 1: An example for  $h(12) = 13$  and  $t(6) = 9$

**Question.** What is a combinatorial proof that  $h(2n) - t(n) = A216256(n)$ .

**Note.** A216256 is

$$\underbrace{1}_1, \underbrace{2}_1, \underbrace{3, 3}_2, \underbrace{4, 4, 4}_3, \underbrace{5, 5, 5}_3, \underbrace{6, 6, 6, 6}_4, \underbrace{7, 7, 7, 7, 7}_5, \underbrace{8, 8, 8, 8, 8}_5, \underbrace{9, 9, 9, 9, 9, 9}_6, \dots$$

**Related.**

1. <https://oeis.org/A216256>
2.  $t(n)$ : <https://oeis.org/A047932>
3.  $h(n)$ : <https://oeis.org/A263135>