Algorithmics	Student information	Date	Number of session
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Activity 1. Tromino Times

N	T Tromino
16	1
…	(0 or 1 until next n)
1024	16
2048	30
4096	140
8192	447
Heap Overflow (n = 16384)	1627

- **What should be the time complexity of the algorithm?**

  The complexity of the algorithm is calculated the following way:

  a = 4

  b = 2 (by division)

  k = 0

  So, the complexity is: $O(n^{\log_b(a)})$ which is $O(n^{\log_2(4)}) = O(n^2)$

  The time complexity of the Tromino algorithm is $O(n^2)$

- **Check if the time obtained in the previous section does or does not meet the theoretical complexity of the algorithm.**

  For a complexity $O(n^2)$ we would have the theoretical values:

  (Note K is n_2^2/n_1^2, and since $n_1 = 2*n_2$ in our case, $K = n_2^2/2n_2^2$ -> ¼ = 0,25)

  N = 1024   T = $1024^2/2048^2 * 30 = 7,5$

  N = 2048   T = $2048^2/4096^2 * 140 = 35$

  N = 4096   T = $4096^2/8192^2 * 447 = 111.75$

  N = 8192   T = $8192^2/16384^2*1627 = 406,75$

  And thus the ties meet approximately the complexity of the algorithm.