1. Properties holding or not: Check number of operations, add delta for each
   1. B. False
   2. B. False

fl(a op b) = (a op b)(1+

1. Condition number:
   1. A. |x\*tan(x)|
2. 500/0.01\*1.06nu = E. 53000nu
3. C. Memory leak
4. Spatial locality: Reference locality, Temporal: enter memory for short period of time. Had nothing to do with numerical accuracy
   1. D. Fewer cache misse
5. Calculate it
6. …
   1. Same approach as 2
   2. Catastrophic cancellation: When we substract nearly equal quantities. Answer is A (find large condition number…)
7. Look it up in slides (exact formula)
   1. Machine epsilon: -1 \* 2^-10 = 2^-11
   2. We have u = 2^-11, solve 1\*1.06\*nu <= 0.1 🡪 n 103
8. …
   1. Multiple recursion
   2. O(n) 🡪 Count number of function calls as function of n
   3. Divided by 2 every time you call function…
      1. O(log(n))

Space complexity “explained”:

Amount of space needed does not depend on n within each function…

Study up on this!

1. C. O(n^3) 🡪 look at the graph axes to derive the slope
2. A. Lower execution time
3. C. reference
4. D. Dynamic array
5. B. No
   1. Reason: Compares relative error instead of absolute!
   2. Example:
      1. x = [1, 1]\*10^-16
      2. y = x. Will produce a small number, but they are not orthogonal!

In general: Questions are leading…