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

   fl(a op b) = (a op b)(1+
2) Condition number: $\frac{x*f'(x)}{f(x)} = x * \left(-\frac{\sin(x)}{\cos(x)}\right) = -x * \tan(x)$
    a. A. |x*tan(x)|
3) 500/0.01*1.06nu = E. 53000nu
4) C. Memory leak
5) Spatial locality: Reference locality, Temporal: enter memory for short period of time. Had nothing to do with numerical accuracy
    a. D. Fewer cache misse
6) Calculate it
7) …
    a. Same approach as 2
    b. Catastrophic cancellation: When we substract nearly equal quantities. Answer is A (find large condition number…)
8) Look it up in slides (exact formula)
    a. Machine epsilon: -1 * 2^-10 = 2^-11
    b. We have u = 2^-11, solve 1*1.06*nu <= 0.1 → n ≈ 103
9) …
    a. Multiple recursion
    b. O(n) → Count number of function calls as function of n
    c. Divided by 2 every time you call function… $n = \frac{n}{2} + \frac{n}{4} + \frac{n}{8} \ldots$
        i. O(log(n))

   Space complexity “explained”:
   Amount of space needed does not depend on n within each function…
   Study up on this!

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

In general: Questions are leading…