

Programming (IDEA)

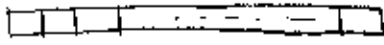
10. $n \& (n-1) == 0$.

What about is a power of 4 ???

$(n \& (n-1) == 0) \& (n \& 0xaaaaaaaa == 0)$

11. Fine

12. Fine (Leetcode)

13.  N.

We basically need to find the smallest M numbers.

IDEA1: Sort. Time: $O(N \log N)$ Space: $O(1)$

IDEA2: Select. Time: $O(MN)$ Space: $O(1)$

IDEA3: Use max-heap. Time: $O(N \log M)$ Space: $O(M)$

14. ???

15. Use $e^x = 1 + x + \dots + \frac{x^n}{n!} + \frac{(0x)^{n+1}}{(n+1)!}$, $0 < \theta < 1$

if $|x| \leq 1$ use Taylor expansion with $R = \dots$

if $|x| > 1$ $e^x = (e^{\frac{x}{K}})^K$ where $|\frac{x}{K}| \leq 1$ then use Taylor.

16. ???

17. Fine (Leetcode).