

2) (5 pts) ANL (Algorithm Analysis)

An algorithm to process a two dimensional array of size $n \times m$ takes $O(nm \lg n)$ time. If the algorithm takes 1 second to process an array of size $n = 2^{20}$ by $m = 2^5$, how long will it take to process an array of size $n = 2^{25}$ by $m = 2^9$. Please express your answer in minutes and seconds, with the number of seconds in between 0 and 59, inclusive.
