Problem 42

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To sort numbers with a skip list, one can simply insert numbers into the list. The resulting list will be in order and to find an element one simply needs to perform the usual search algorithm. The cost of the algorithm then becomes the cost of insertion for n elements. The cost of insertion for each element is simply $\mathcal{O}(logn)$. Thefore, the total cost of the algorithm is $\mathcal{O}(nlogn)$.