2 Consider the variant of quicksort where in each iteration we choose the pivot in the following way.. We take the elements in the first $\lceil \sqrt{n} \rceil$ positions and sort thea using normal quicksort. We let p be their median and pivot using p. Determine a tight (up to a constant multiplicative factor) bound on the worst case time complexity of this algorithm

The *median* of a set of k numbers is the $\lfloor \frac{k}{2} \rfloor$th largest of them.