

COSC 311: ALGORITHMS

MINI 3

Due Friday, September 27 in class

1. Quicksort. Here's an unsorted array. Run quicksort on the array, showing what the array looks like *after* each partition step is complete, assuming you are using the first element as the partition element (you should *not* show the intermediate steps taken while partitioning). You can show the left and right recursions in the same picture.

9	11	6	15	2	10	4	7	16	13	12	5	8	3	14	1
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2. Induction. Suppose you were going to prove by induction that a certain claim holds for all powers of 2, starting with 1. What steps would you take to prove this? Explain in your own words why those steps form a complete, convincing proof.