

## 2. Problem 2

a.  $n = 9 \rightarrow 3n/4 = 27/4 = 6.75$

This table contains the investigation of good and bad elements:

Pivot, $x$	No. of elements $\geq x$	No. of elements $\leq x$	Comment
5	2	6	Good pivot
1	8	0	Bad pivot
4	3	5	Good pivot
3	4	4	Good pivot
6	1	7	Bad pivot
2	6	2	Good pivot
7	0	8	Bad pivot
1	8	0	Bad pivot
3	4	4	Good pivot

Elements that are good pivots are: [5, 4, 3, 2, 3].

b.  $\text{No. of good pivots} = 5 > n/2$

$\therefore$  According to the example above, it is true that at least half of the elements are good pivots.