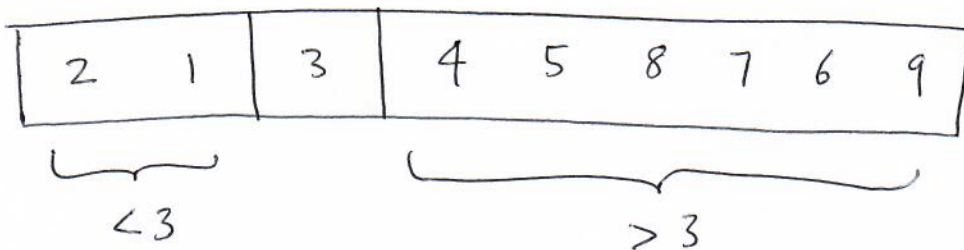
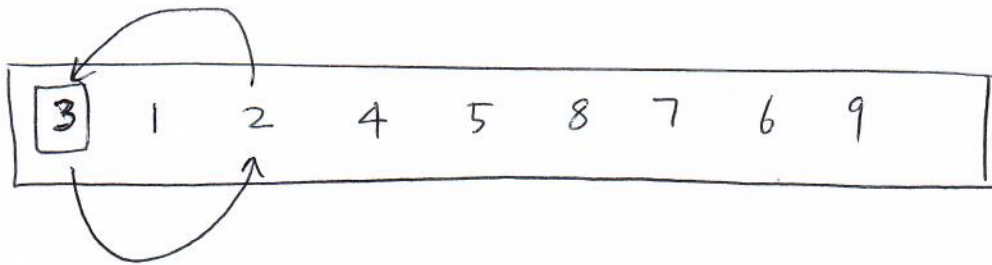


Prob. 1

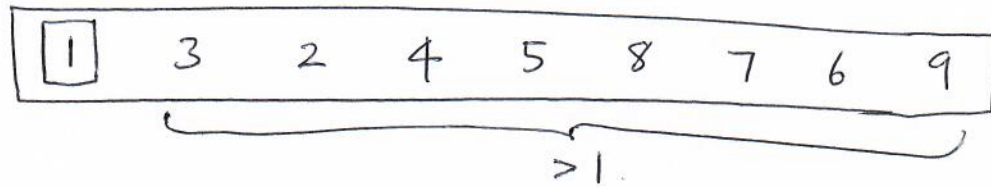
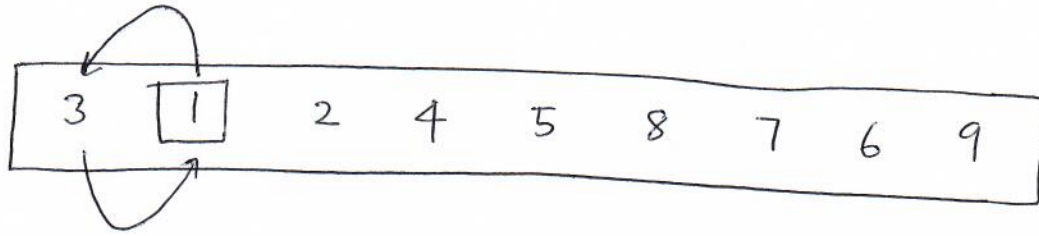
$$A = \{ 3, 1, 2, 4, 5, 8, 7, 6, 9 \}$$

A pivot  $p$  is such that all  $A[i] < p$  are to the ~~A~~ left of  $p$  and all  $A[i] > p$  are to the right of  $p$ , ~~in~~ <sup>in</sup> some permutation of  $A$ .

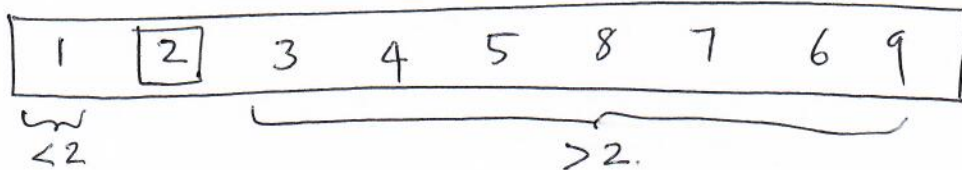
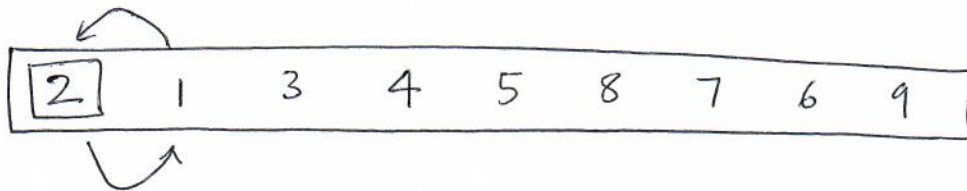
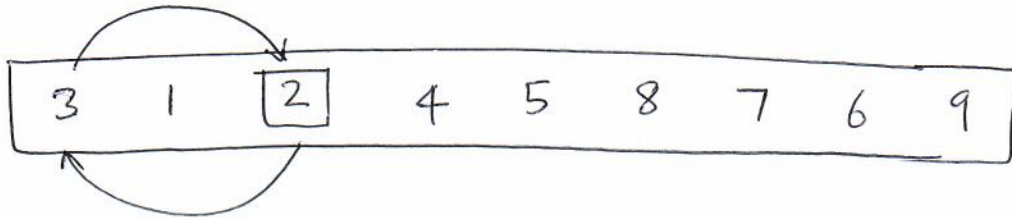
① Partition ( $A, A[1]$ ) :



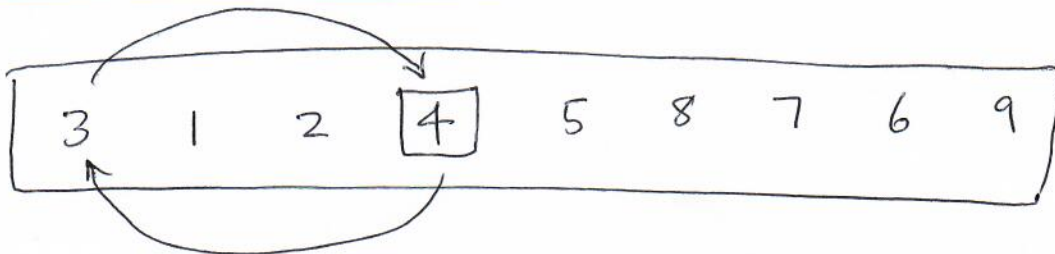
(b) Partition (A, A[2]):

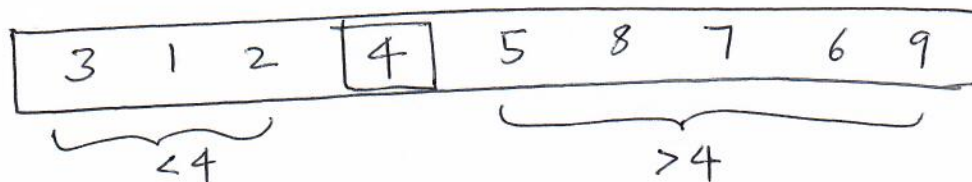
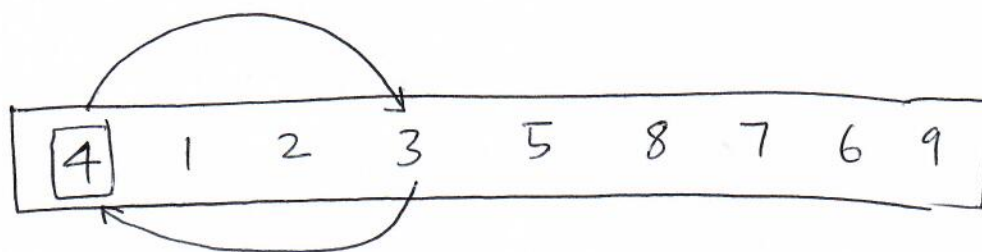


(c) Partition (A, A[3]):

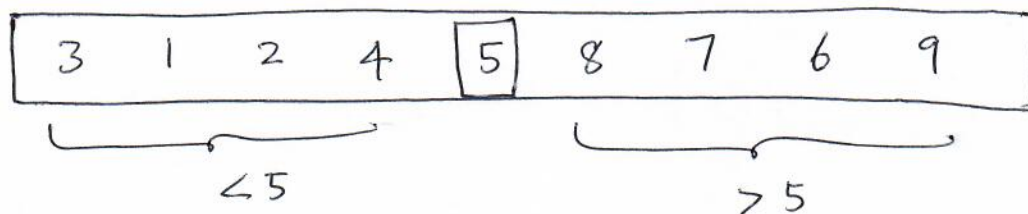


(d) Partition (A, A[4]):

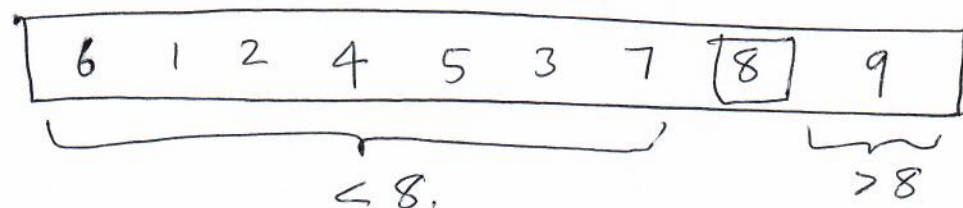
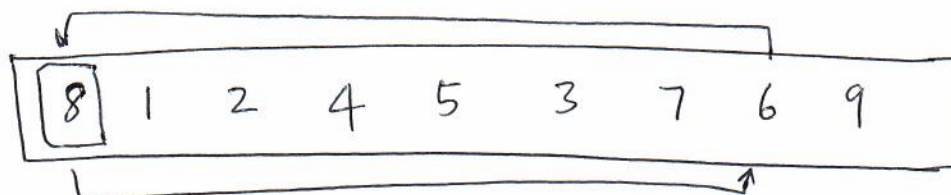
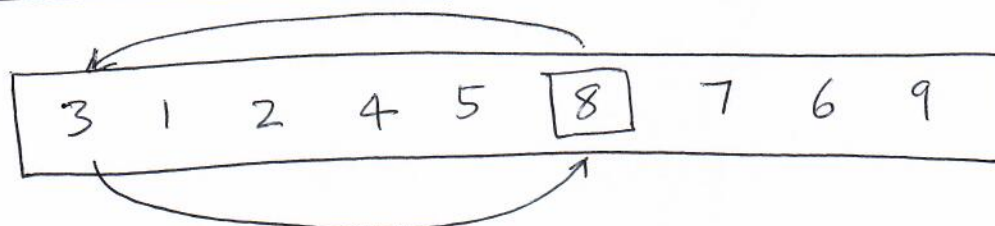




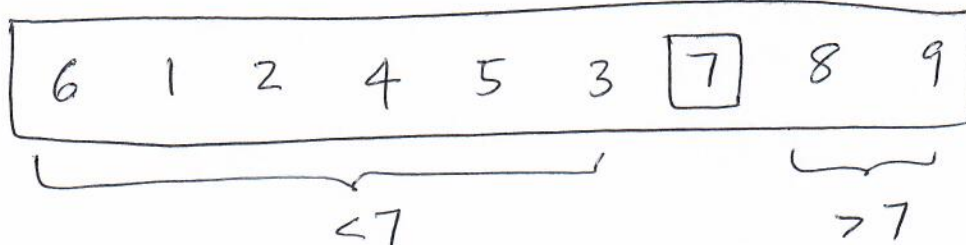
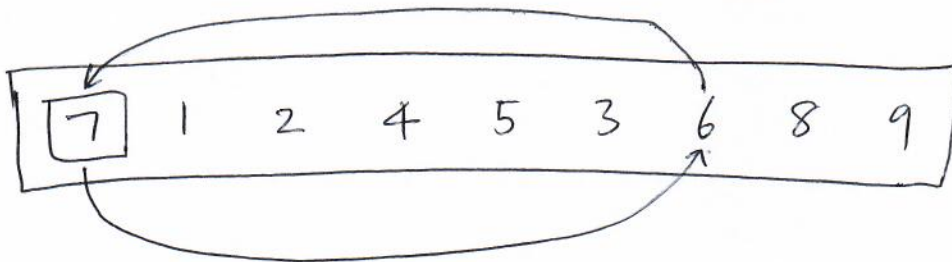
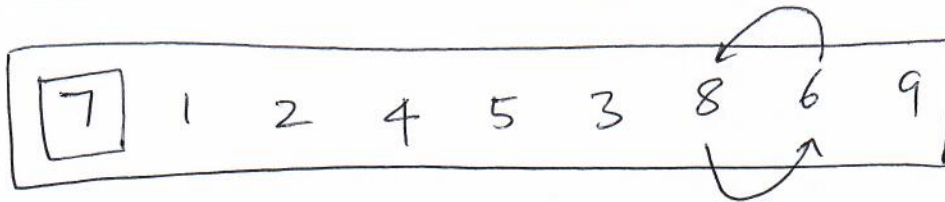
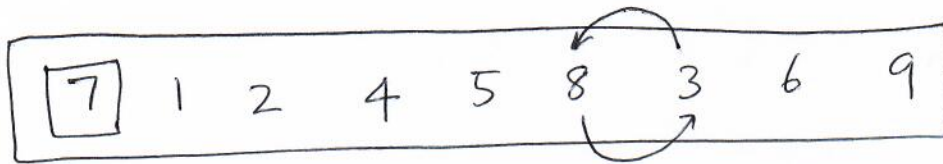
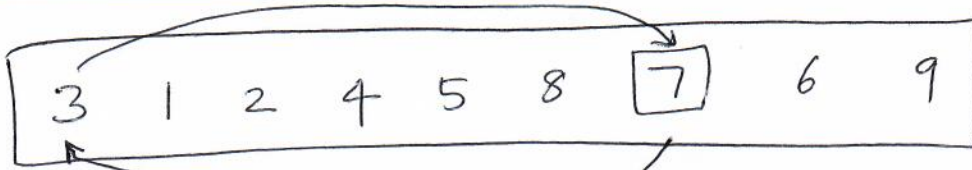
(e) Partition ( $A, A[5]$ ) :



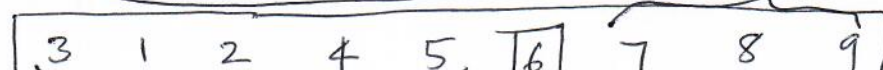
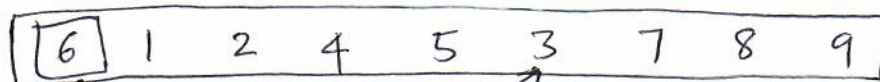
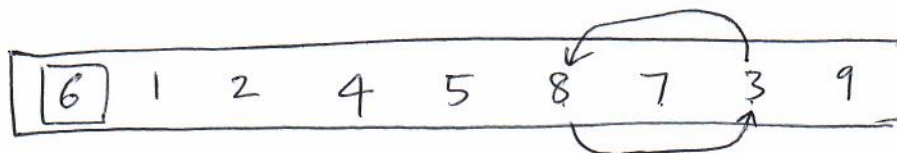
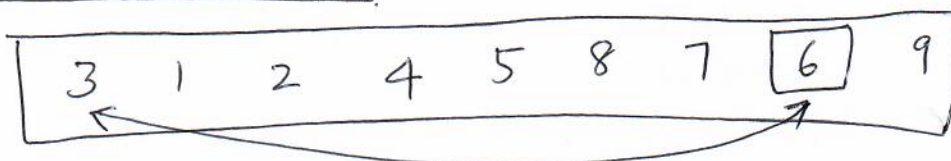
(f) Partition ( $A, A[6]$ ) :



g) Partition (A, A[7]) :

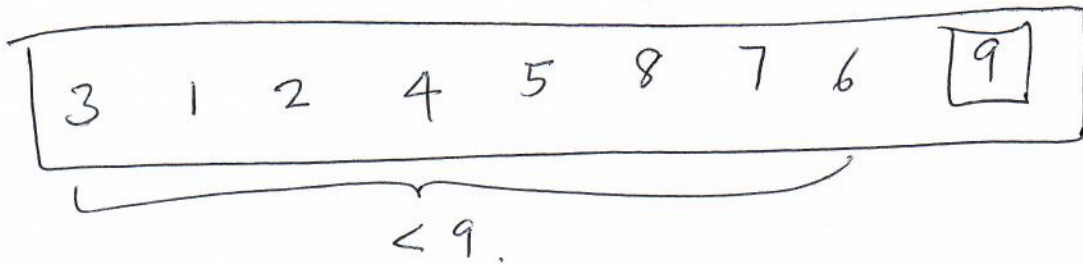


h) Partition (A, A[8]) :



⑨ Partition (A, A[9]) :

⑤



$\therefore$  From (a) - (i), we find that every element in  $A$  is a potential pivot in  $\text{QuickSort}(A)$ .

Probs. 2 and 3)

Programming exercises.