

Question 1:

{179, 721, 639, 549, 292, 427, 335, 435, 62}

Key%9

0 → 639 → 549 **1** → 721 **2** → 335 **3** → 435 **4** → 427 **5** → 292 **8** → 179 → 62

(Key/9)%9

1 → 335 → 179 **2** → 427 **3** → 435 **5** → 292 **7** → 549 **8** → 639 → 721 → 62

(key/81)

0 → 62 **2** → 179 **3** → 292 **4** → 335 **5** → 427 → 435 **6** → 549 **7** → 639 **8** → 721

Question 2:

Algorithm sorting4Elements (A n)

Input: Array A with 4 Elements as n

output: Sorted Array A

If(A[0]> A[1])

 lower1 = A[1]

 lower2=A[0]

 Else:

 lower1=A[1]

 Lower2=A[0]

If(A[2]>A[3])

 Lower3=A[3]

 Lower4=A[2]

 Else:

 lower3=A[2]

 Lower4=A[3]

If(lower3<lower2)

If(lower3<lower1)

Small1=lower3

If(lower4<lower1)

Small2=lower4

small3=lower1

Small4=lower2

return A

Else:

small2=lower1

If(lower2<lower4)

Small3=lower2

Small4=lower4

return A

Else:

Small3=lower4

small4=lower2

return A

Else:

Small1=lower1

if(lower2>lower3)

Small2=lower3

If(lower2>lower4)

Small3=lower4

Small4=lower3

Else:

Small3=lower3

Small4=lower4

Else:

Small2=lower2

Small3=lower3
small4=lower4

return A

➔ **This algorithm is assuming for the worst case only**

Question 3:

fbsArray(A,n)

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    Array A of a length  n
    k<-0
    y<-0
    if(n is even)
    new Array (even_array,n/2)
    new Array odd_array,n/2)
    if(n is odd)
    new Array (even_array,n/2+1)
    new Array odd_array,n/2)
    for(i<-0 to n-1)
        if(i%2==0)
            even_array[k]=a[i]
            k++
        if(i%2!=0)
            odd_array[y]=a[i]
            y++
    Arrays.sort(even_array)
    Arrays.sort(odd_array, Collections.reverseOrder())
    k=0
    y=0
    for (i<-0 to n-1)
        if(i%2==0)
            a[i]=even_array[k]
            k++
        else
            a[i]=odd_array[y]
            y++;
    if(n%2!=0 && a[1]<a[n-1])
        break
    if(n%2==0 && a[1]<a[a.length-2])
        break

```