

1.

$a(n) = 1729n$ is both $O(n)$ and $\Omega(n)$

$b(n) = n^{\log n}$ is $\Omega(n)$

$c(n) = \sqrt{n}$ is $O(n)$

2.

e b g h a d f c

pair: a, h

$a(n)$ is $\Theta(h(n))$

3.

(a) 0; the given array may be the original array and no elements have been swapped.

(b) 2; after the i -th iteration of the loop, the first i elements will be in the correct place. We can see that the first 2 elements are in the correct place so the maximum number of iterations is 2.

4.

ABEDGH

5.

ZTPVSR