

Les 4 huiswerk

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1 Opgave 1

- a. pivot $p = \text{mid}(4,7,2) = 4$
- b. $\{4i, 9, 5, 1, 2, 8, 3, 6j, 7\}$
 - $\{7i, 9, 5, 1, 2, 8, 3, 6j, 4\}$ swap pivot
 - $\{7i, 9, 5, 1, 2, 8, 3j, 6, 4\}$ $i > p$
 - $\{3, 9i, 5, 1, 2, 8, 7j, 6, 4\}$ swap i, j
 - $\{3, 9i, 5, 1, 2j, 8, 7, 6, 4\}$ $i > p$
 - $\{3, 2, 5i, 1j, 9, 8, 7, 6, 4\}$ swap i, j
 - $\{3, 2, 5i, 1j, 9, 8, 7, 6, 4\}$ $i > p$
 - $\{3, 2, 1, 5ij, 9, 8, 7, 6, 4\}$ swap p, i
 - $\{3, 2, 1, 4, 9, 8, 7, 6, 5\}$

2 Opgave 2

- a. pivot $p = \text{mid}(7,2,6) = 6$
- b. $\{7i, 5, 8, 1, 6, 3, 4, 9j, 2\}$
 - $\{7i, 5, 8, 1, 2, 3, 4, 9j, 6\}$ swap p
 - $\{7i, 5, 8, 1, 2, 3, 4, 9j, 6\}$ $i > p$
 - $\{7i, 5, 8, 1, 2, 3, 4j, 9, 6\}$ swap i, j

$\{4, 5i, 8, 1, 2, 3, 7j, 9, 6\}$

$\{4, 5, 8i, 1, 2, 3, 7j, 9, 6\} \ i > p$

$\{4, 5, 8i, 1, 2, 3j, 7, 9, 6\}$

$\{4, 5, 3, 1i, 2, 8j, 7, 9, 6\}$ swap i, j

$\{4, 5, 3, 1, 2, 8ij, 7, 9, 6\}$ swap p, i

$\{4, 5, 3, 1, 2, 6ij, 7, 9, 8\}$ swap p, i

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

3 Opgave 3

a. $O(n^2)$

b. $O(\log_2 n)$

c. $O(\log_2 n)$