Exercise 1. DPV 2.4

Solution:

- Algorithm A:

- Algorithm B:
• Algorithm C:

• Choice:
Exercise 2. DPV 2.19

Solution:

(a) Time Complexity:

(b) • Algorithm:

• Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
Solution:

1. • Algorithm:

• Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
2. • Algorithm:

• Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
Exercise 4. DPV 4.8

Solution:
Exercise 5. DPV 4.18

Solution:

- Algorithm:

- Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
Problem 1. DPV 2.5

Solution:

(a) :

(b) :

(c) :

(d) :
Solution:

- Algorithm:

- Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
Problem 3

(a) DPV 2.12

Solution:

(b) DPV 2.14

Solution:

- Algorithm:

- Pseudo-Code:
• Proof of Correctness:

• Time Complexity:

Solution:

• Algorithm:
• Pseudo-Code:

• Proof of Correctness:

• Time Complexity:
Problem 4. DPV 2.27

Solution:

(a) :

(b) :

(c) :
Problem 5. DPV 4.5

Solution:

- Algorithm:

- Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
Solution:

• Algorithm:

• Pseudo-Code:
• Proof of Correctness:

• Time Complexity:
Solution:

- Algorithm:

- Pseudo-Code:
• Proof of Correctness:

• Time Complexity: