

5.3. Suppose $T_1(N) = O(F(N))$ and $T_2(N) = O(F(N))$. Which of the following are true?

(a) $T_1(N) + T_2(N) = O(F(N))$

(b) $T_1(N) - T_2(N) = O(F(N))$

(c) $T_1(N)/T_2(N) = O(1)$

(d) $T_1(N) = O(T_2(N))$

5.30. Give an efficient algorithm to determine whether an integer i exists such that $A[i] = i$ in an array of increasing integers. What is the running time of your algorithm?