

3.1

1) Describe an algorithm for finding both, the largest and the smallest integers in a finite sequence of integers.

3.2

3) Show that x^3 is $O(x^4)$ but that x^4 is not $O(x^3)$.

4) Explain what it means for a function to be $\Omega(1)$

11.2

5) Construct the binary tree with prefix codes representing these coding schemes.

a: 1, e: 001, t: 0001, m: 1101, l: 000011

5.1

Use strong induction to prove that, for every $n \geq 12$, any n -cent postage can be made up using 3-cent stamps and 7-cent stamps.