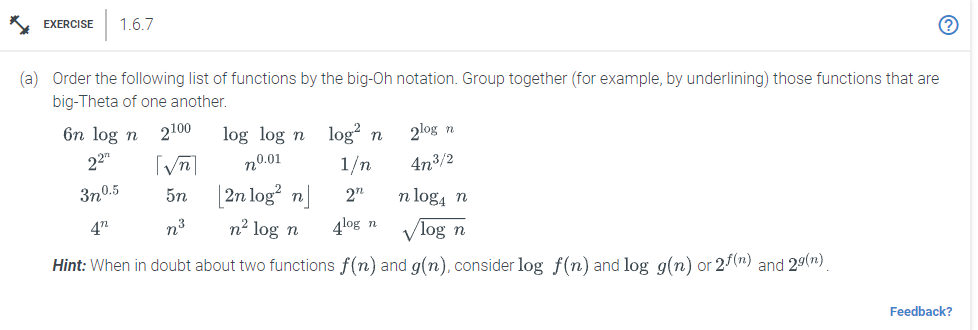
# Michael Chillemi

# 05/26/2023

# CS 590 - Algorithms

# M1.C1: Module 1 Analyzing Algorithms Reinforcement Exercises

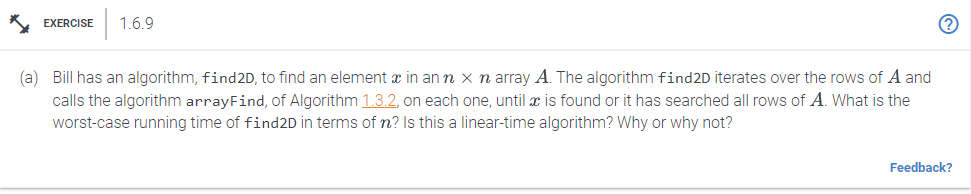
Problem 1.6.7



Answer:

3. ,
4. ,
5. ,

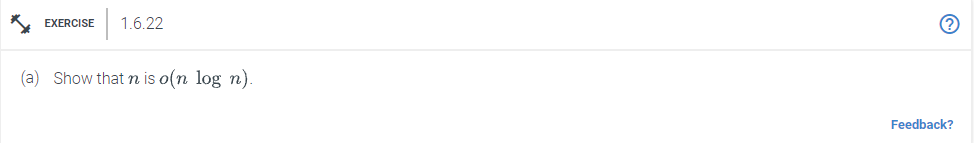
Problem 1.6.9



Answer:

The worst-case running time of find2D in terms of n is O(). This is the case because arrayFind algorithm has a O() worst-case running time. Bill’s algorithm find2D runs and calls arrayFind O() times. Thus O() \* O() = O(). Since the input value would be an array we would consider this to be a quadratic time algorithm.

Problem 1.6.22



Answer:

To show that

We know that if is a finite value

Herewe can prove it by applying L’Hopitsals rule:

and

Which is a finite value

Hence