3610 HW1

1a

2a

,

,

As n approaches infinity, approaches 1

. , the series converges

let X be the sum of the series above. By dividing the series by two we find

Subtract by bases and we find

This can be shown as which has already been shown to equal 1. Since X/2 = 1, S = 2

2

From smallest to largest

37

and have the same growth rates,

and have the same growth rates

3a

where is any function

where c1 and c2 are any integer

3b

where is any integer

where and are any integer

, a new constant

4b

Find c1 and c2, c1: big O, c2: big Omega

f(n) =

By definition of

4c

= 16

By definition of

5

Algorithm in terms of big O is .

Exact number of additions, including incrementing, is

6

Algorithm in terms of big O is .

7

8

I read :)

9

10

11a

11b

5