**Assignment** 1

R-1.2 Algorithm A uses operations, while algorithm B uses operations. Determine the value of such that A is better than B for

Solution:

Let c = 10

This statement is true for value of

So it is true for any value of

Solution by professor:

R-1.6 Order the following list of functions by the big-O notation.

Solution:

, , , , , , , , , , , .

Solution from porf:

, , , , , , , , , , , ,

R-1.10 Give a big-O characterization, in terms of n, of the running time of the Loop1 method below:

|  |  |
| --- | --- |
|  | |
|  | 1 |
|  | n |
|  | n |
|  | 1 |
|  | |

R-1.14 Perform a similar analysis for method Loop5 below:

|  |  |
| --- | --- |
|  | |
|  |  |
|  |  |
|  |  |
|  |  |
|  | |

Prove:

Suppose:

than

Let rise both side with the same constant a

Take the logarithm both side

=, but

=, but we supposed