3) (10 pts) ANL (Recurrence Relations)

Using the iteration technique, determine the Big-Oh solution to the recurrence relation below, in terms of ***n***.

$$T(n) = 2T\left(\frac{n}{2}\right) + n^3, \text{ for n > 1}$$
$$T(1) = 1$$

Computer Science Foundation Exam

May 18, 2024

Section D

ALGORITHMS

NO books, notes, or calculators may be used,
and you must work entirely on your own.

PLEASE USE CAPITAL LETTERS IN WRITING YOUR NAME

Last Name: _____

First Name: _____

UCFID: _____

Question #	Max Pts	Category	Score
1	10	DSN	
2	10	ALG	
3	5	ALG	
TOTAL	25	----	

You must do all 3 problems in this section of the exam.

Problems will be graded based on the completeness of the solution steps and not graded based on the answer alone. Credit cannot be given unless all work is shown and is readable. Be complete, yet concise, and above all be neat. For each coding question, assume that all of the necessary includes (stdlib, stdio, math, string) for that particular question have been made.