Quiz 1

Started: Oct 7 at 4:59pm

Quiz Instructions

Question 1 — 2 pts

Let M and N be the number of push and pop operations executed in the Graham-Scan algorithm, respectively. Then the number of points on the convex hull is:

- ○ M-2*N
- ◉ M-N
- ○ M-N/2
- ○ M

Question 2 — 2 pts

Let f(n) = 1^k + 2^k + 3^k + ... + (n-1)^k + n^k. Then we have f(n) = Big-Theta(n^k).

- ○ True
- ◉ False

Question 3 — 2 pts

Solve the following recursion: T(n) = 9 * T(n/3) + n^3.

- ○ T(n) = Big-Theta(n^2 * log(n))
- ○ T(n) = Big-Theta(n^2)
- ○ T(n) = Big-Theta(n^3 * log(n))
- ◉ T(n) = Big-Theta(n^3)

Question 4 — 2 pts

Let f(n) = 1/1 + 1/2 + 1/3 + 1/4 + ... + 1/(n-1) + 1/n. Then we have f(n) = Big-Theta(log(n)).

- (•) True
- ( ) False

Question 5 — 2 pts

If n points are on a single line on the primal plane, then on the dual plane the corresponding n lines intersect at a single point.

- (•) True
- ( ) False

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