Attempt

Attempt 1

Attempt 1

Due on Aug 25, 2024 10:00 PM

Available on Aug 22, 2024 12:01 AM until Aug 29, 2024 10:00 PM

Written: Aug 25, 2024 4:35 AM - Aug 25, 2024 4:58 AM

Quizzes Event Log

Timing

Time Spent: 0:22:57

Time Limit: 0:25:00. Not exceeded

Evaluation Summary

Reset Evaluation

Attempt Grade

37 / 37

Student View Preview

37 / 37 - 100 %

Attempt Feedback

Quiz Results

Question 1

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(2^n) cycles?

- ○ 18
- ✓ ○ 54
- ○ 300000
- ○ 100000000
- ○ 1E15
- ○ 3E16
- ○ 1E33
- ○ 1E165

Save Time

4:58 AM

Score

5 / 5 (graded by Md Amjad Hossain)

▷ Expand question 1 feedback

Question 2

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can

- 54
- 300000
- 100000000
- 1E15
- 3E16
- 1E33
- ✓ 1E165

Save Time

4:58 AM

Score

5 / 5 (graded by Md Amjad Hossain)

Expand question 2 feedback

Question 3

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n) cycles?

- 18
- 54
- 300000
- 100000000
- 1E15
- ✓ 3E16

Save Time

4:58 AM

Score

5 / 5 (graded by Md Amjad Hossain)

Expand question 3 feedback

Question 4

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n!) cycles?

- ✔ 18
- 54
- 300000
- 100000000
- 1E15
- 3E16
- 1E33
- 1E165

Save Time

4:58 AM

Score

Expand question 4 feedback

Question 5

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n^2) cycles?

- 18
- 54
- 300000
- ✓ 100000000
- 1E15
- 3E16
- 1E33
- 1E165

Save Time

4:58 AM

Score

5 / 5 (graded by Md Amjad Hossain)

Expand question 5 feedback

Question 6

Assume that your computer runs at 1 GHz (so each cycle takes 1/1E9 seconds) and your computer can complete an instruction every cycle. How large of n can an algorithm complete within 1 year, if it requires O(n^3) cycles?

- [x] 300000
- [ ] 100000000
- [ ] 1E15
- [ ] 003E16
- [ ] 1E33
- [ ] 1E165

Save Time

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Score

5 / 5 (graded by Md Amjad Hossain)

Expand question 6 feedback

question feedback has been set

Question 7

In about three sentence, explain the divide, conquer and combine steps for an algorithm apply to find the maximum subarray (given the array, a lower bound index and an upper bound index).

divide the array into 2 halves
conquer each ones to find the maximum sub-array in the left, the right and the sub-array which spans both of them
combine: compare the maximum sub-array from each of them anf the span sub-array to know the maximum value.

Answer Key

Back

Computational Complexity

Due: 8/25/2024 10:00 PM • Algorithms Analysis and Design

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midpoint, so that low <= i <= mid <= j <= high

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Update Retract