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Question: 6. (3 pts) Fill in the last line of the three empty rows, which sho...



6. (3 pts) Fill in the last line of the three empty rows, which shows the size of a problem can be solved in the **same amount of time** for each complexity class on a new machine that **runs sixteen as fast as the old one**. Solve by hand when you can, use Excel or a calculator when you must: I used a calculator only for $O(N \log_2 N)$ and solved it to 3 significant digits. Solving a problem in the same amount of time on the new/faster machine is **equivalent** to solving a problem that takes sixteen times the amount of time on the old machine. See $O(N)$ for an example.

N = Problem Size	Complexity Class	Time to Solve on Old Machine (secs)	N Solvable in the same Time on a New Machine 16x as Fast
10^6	$O(\log_2 N)$	1	
10^6	$O(N)$	1	16×10^6
10^6	$O(N \log_2 N)$	1	
10^6	$O(N^2)$	1	

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Expert Answer



anonymous answered this
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- a) $O(\log n)$ will take $N = 10^6 / \log_2(16 * 10^6)$ as we will equate the time taken by them
- b) N takes 10^6 value
- c) This will be equal to $n * \log n = 16 * 10^6$
- d) $4 * 10^3$

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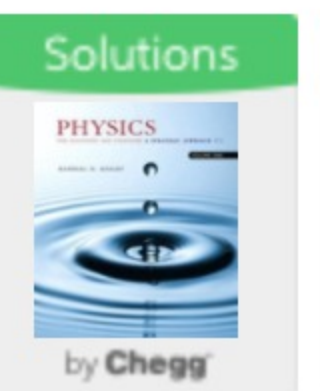
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Q: python

A: [See answer](#)

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4. (6 pts) The following functions each determine if any two values in alist sum to asum. As is shown in the...

```
4. (6 pts) The following functions each determine if any two values in alist sum to asum. As is shown in the
       (a) write the complexity class of each statement on its right, where N is len(alist). (b) Write the full
       calculation that computes the complexity class for the entire function. (c) Simplify what you wrote in (b).
def summing_2 (alist,asum):
    for i in alist:
        for n in alist:
            if i+n==asum:
                return (i,n)
    return None
(b)
(c)
```

[See answer](#)

7c. (5 pts) Write the complexity class of each algorithm, assuming the required data structure stor...

```
7c. (5 pts) Write the complexity class of each algorithm, assuming th
(1) Remove the value at the middle of a linked list (assuming
(2) Use binary search to determine whether a value is in a v
(3) Remove the 10 smallest values in a list by repeatedly
(4) Remove the N/2 smallest values in a list by repeatedl
(5) Remove the N/2 smallest values in a list by sorting it
```

[See answer](#)

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A: [See answer](#) 100% (5 ratings)

Q: Can someone pls help me with number 6 asap ?

A: [See answer](#)

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