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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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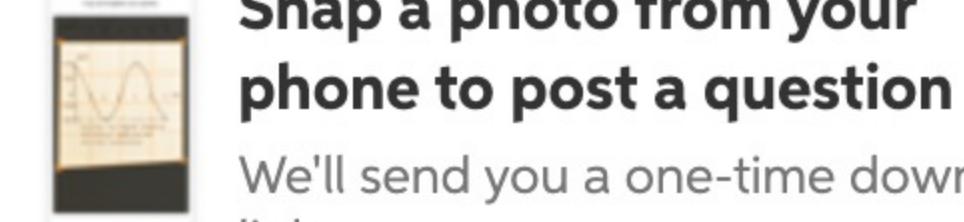
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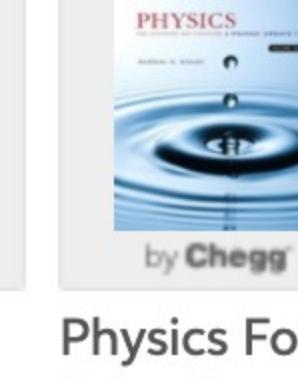
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A: See answer

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```
def sumset_1 (alist,sum):
    for i in range(len(alist)):
        for j in range(i+1, len(alist)):
            if alist[i] + alist[j] == sum:
                return True
    return False
```

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 the...

```
def sumset_2 (alist,sum):
    sumset = set()
    for v in alist:
        if sum - v in sumset:
            return True
        sumset.add(v)
    return False
```

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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