

Big O classes: Concept Challenge



Concept Challenge: Procedure

- **Pause** Try to solve the problem yourself
- **Discuss** with other learners (if you can)
- **Watch** the UC San Diego learners video
- **Answer** the question again
- **Confirm** your understanding with our explanation



Which of the following statements give the **tightest** big O classes?

1. $n^2 - 10000 = O(n)$

2. $n + n \log(n) = O(n^2)$

3. $\log_{10}(n) = O(\log_2(n))$

A. Statements 1 and 2.

B. Statements 2 and 3.

C. Statements 1 and 3.

D. Only statement 3.

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What's the tightest worst case runtime of the following code snippet?

```
for ( int i=0; i < 2*n; i++ ) {  
    for (int j=n-1000; j < n; j++ ) {  
        for (int k=n/2; k < n; k++) {  
            sum++;  
        }  
    }  
}
```

- A. $O(n)$
- B. $O(\log(n))$
- C. $O(n^2)$
- D. $O(n^3)$
- E. Something else