QotD1

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1. Consider some problem P of size N, and Algorithms A and B, which solve P.
   Algorithm A has an asymptotic run-time of $\theta(N^2)$
   Algorithm B has an asymptotic run-time of $\theta(N \lg N)$
   Choose the most appropriate answer below
   (1 point)
   A. Algorithm A will always execute in less time than Algorithm B
   B. Algorithm B will always execute in less time than Algorithm A
   C. For N sufficiently large, Algorithm A will execute in less time than Algorithm B
   D. For N sufficiently large, Algorithm B

✓ will execute in less time than Algorithm A

E. None of the above options are correct

2. When determining the Big-O or Theta run-time of an algorithm, we **ignore the lower order terms** in the growth function. Why do we ignore these terms? *(1 point)*

A. They are very small

B. As N grows they become less
✓ significant in comparison to the highest order term

C. They are implementation dependent