

Big-O

Part c: (Dis)Proving Big-O Relationships

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Learning Objectives

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- Given functions f and g , (dis)prove that f is $O(g)$ and/or $\Theta(g)$.

Example 0: Warm-up

Prove $17n$ is $O(n^2)$.

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Example 1: The bigger, the better

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Prove $450n^2 + 25n + 2$ is $O(n^3)$.

Example 2: I've heard it both ways

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Prove $2n \log n + 3n$ is $\Theta(n \log n)$.

Example 3: Trading places

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Prove $|\sin(n\pi/2)|$ is **not** $O(|\cos(n\pi/2)|)$.

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