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1. $F(n) = \Omega(g(n))$ implies $g(n) = O(f(n))$

Answer: True

By definition $F(n) = \Omega(g(n))$ which implies $0 < c \cdot g(n) \leq f(n)$ $F(n) = \Omega(g(n))$ which implies $0 < g(n) \leq c \cdot f(n)$

Let us assume that $f(n) = 100n^2$, $g(n) = n^2$

$f(n) \geq c \cdot g(n)$ $100 \cdot n^2 \geq c \cdot n^2$ Let us assume that constant $c = 50$ $100n^2 \geq 50n^2$ ≥ 1

Hence the above notation is true.

Using the master theorem in Chapter 4, we can get $T(n) = \Theta(\log n)$.