Name GT ID (e.g., 903123456):

Homework 1.
Due: Monday, January 13, 2019, 11:55pm EST via Gradescope.

Problem 1 [DPV] Problem 0.1

Part (a). DPV 0.1(c)
$f(n) = 100n + \log n, g(n) = n + (\log n)^2$.

Which holds: (Pick one)

A. $f(n) = O(g(n))$
B. $g(n) = O(f(n))$
C. $f(n) = O(g(n))$ and $g(n) = O(f(n))$

Part (b). DPV 0.1(d)
$f(n) = n \log n, g(n) = 10n \log 10n$.

Which holds: (Pick one)

A. $f(n) = O(g(n))$
B. $g(n) = O(f(n))$
C. $f(n) = O(g(n))$ and $g(n) = O(f(n))$

Part (c). DPV 0.1(k)
$f(n) = \sqrt{n}, g(n) = (\log n)^3$.

Which holds: (Pick one)

A. $f(n) = O(g(n))$
B. $g(n) = O(f(n))$
C. $f(n) = O(g(n))$ and $g(n) = O(f(n))$

Part (d). DPV 0.1(ℓ)
$f(n) = \sqrt{n}, g(n) = 5^{\log_2 n}$.

Which holds: (Pick one)

A. $f(n) = O(g(n))$
B. $g(n) = O(f(n))$
C. $f(n) = O(g(n))$ and $g(n) = O(f(n))$

Part (e). DPV 0.1(n)
$f(n) = (\log n)^{\log n}$, $g(n) = 2^{(\log n)^2}$.

Which holds: (Pick one)

A. $f(n) = O(g(n))$
B. $g(n) = O(f(n))$
C. $f(n) = O(g(n))$ and $g(n) = O(f(n))$