Homework 1. Part 1
Due: Monday, January 15, 2018 before 8am EST.

Problem 1   DPV 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 $g(n) = O(f(n))$