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CSCI-UA 310-001 PS7

1.

    a. $a = 2, b = 4, e = .5, f = \log_4 2 = .5 \rightarrow e = f \rightarrow T(n) = O(n^{.5} \log(n))$

    b. $a = 2, b = 4, e = .51, f = \log_4 2 = .5 \rightarrow e > f \rightarrow T(n) = O(n^{.51})$

    c. $a = 3, b = 3, e = 1, f = \log_3 3 = 1 \rightarrow e = f \rightarrow T(n) = O(n\log(n))$

    d. $a = 16, b = 4, e = 1.5, f = \log_4 16 = 2 \rightarrow e < f \rightarrow T(n) = O(n^2)$

    e. $a = 7, b = 2, e = 2, f = \log_2 7 = 2.80735 \rightarrow e < f \rightarrow T(n) = O(n^{2.80735})$