Quiz 1

Question 1

- Which of these sorts is stable: Insertion sort, Selection sort, Merge sort? (Choose the best answer)
    - A: Only Insertion sort
    - B: Only Selection sort
    - C: Selection sort and Merge sort
    - D: Insertion sort and Merge sort
    - E: Insertion sort, Selection sort, and Merge sort

Question 2

- If the number of comparisons done by an algorithm satisfies the following recurrence

    $T(N) = 1$ if N=1,

    $T(N) = T(N/2) + N$ if N>1

then T(N) is in (choose the best answer)

  - A: $O(\log N)$
  - B: $O(N)$
  - C: $O(N \log N)$
  - D: $O(N^2)$
  - E: None of the above

Question 3

- In which of the following choices are the functions sorted by increasing growth rate (slowest-growing first, fastest –growing last)?

  - A: $\log N$, N, N^2, $N \log N$, 2^N
  - B: $\log N$, N, $N \log N$, N^2, 2^N
  - C: $\log N$, N, $N \log N$, 2^N, N^2
  - D: N, $\log N$, $N \log N$, 2^N, N^2
  - E: N, $\log N$, $N \log N$, N^2, 2^N