

## Merge Sort – Random Initialization

- The 11 data points indicate an  $O(n \log_2 n)$  relationship between list length and sorting time. The relation can be modeled by  $n \cdot \log_2(n) / 120667964.798$ .
- Prediction for the time required for Merge Sort to sort a randomly initialized list of length 10,000,000,000,000:  
 $y(10000000000000) = 2752.95$  seconds or 45.88 minutes

