**a)** Insertion

Elapsed time in nanoseconds: 1396900000

**d)** Elapsed time in nanoseconds for original merge sort: 34973500

Elapsed time in nanoseconds for improved merge sort with max\_level=13: 14950500

**e)**

Max level: 1, Elapsed time in nanoseconds: 1529138000

Max level: 2, Elapsed time in nanoseconds: 306110900

Max level: 3, Elapsed time in nanoseconds: 115418200

Max level: 4, Elapsed time in nanoseconds: 73018600

Max level: 5, Elapsed time in nanoseconds: 29441300

Max level: 6, Elapsed time in nanoseconds: 22381100

Max level: 7, Elapsed time in nanoseconds: 9233300

Max level: 8, Elapsed time in nanoseconds: 7174100

Max level: 9, Elapsed time in nanoseconds: 5095200

Max level: 10, Elapsed time in nanoseconds: 7753700

Max level: 11, Elapsed time in nanoseconds: 3880200

Max level: 12, Elapsed time in nanoseconds: 3966900

Max level: 13, Elapsed time in nanoseconds: 4254100

Max level: 14, Elapsed time in nanoseconds: 5151800

Max level: 15, Elapsed time in nanoseconds: 5186900

Max level: 16, Elapsed time in nanoseconds: 5551500

Max level: 17, Elapsed time in nanoseconds: 9130600

Best max level: 11, Min elapsed time in nanoseconds: 3880200