Problem of the Week – 10 and 11

10. Solving MAX3SAT

Show that if there exists a polynomial-time approximation scheme for MAX3SAT then, in fact, MAX3SAT can be solved exactly in polynomial time.

11. Branching programs

(a) Show that any boolean function over n boolean inputs can be computed by a branching program with $O(2^n)$ nodes.

(b) Show that if one can test in polynomial time whether two branching programs compute the same function, then P = NP. Is the same true for read-once branching programs?