

HW7 – DUE 10 AM 20.Feb.2013

Instructions:

Submit **HW7_[lastname].pdf** by dropping it into your Assignments folder on Google Drive. Please document your code.

1. Write S-expressions to compute each of the following:

- a. $3^2 + 4^2$
- b. $(3 * 17) + (4 * 19)$
- c. $12^3 - (9^3 + 10^2)$

2. Find sequences of CARs and CDRs that return x when applied to the following lists.

- a. (a b x d)
- b. (a (b (x d)))
- c. ((a (b (x) d))))

3. Using only atoms and calls to CONS construct the three lists of problem 2.

4. Using only CAR, CDR, CONS, and defun define a function REV2 that reverses lists of 2 elements. (You may assume it will be invoked with a properly structured argument). Thus

(rev2 '(a b)) --> (b a)
(rev2 '((a) (b c))) --> ((b c) (a))