Topics: risk minimization + model selection + VC-theory.
All problems are taken from the textbook Predictive Learning, Cherkassky 2013.

Presentation of HW solution results: should be well-presented (in a readable form). All solutions should be typed (not hand-written) and all Tables/ Figs + discussions presented using consistent notation (e.g., following terminology introduced in this course).

1. Problem 2.10.

2. (a) Problem 4.7
   (b) Problem 4.8.

3. (a) VC-dimension for a set of spherical decision functions in 2D was discussed in class (see Fig. 4.7 in the textbook). Using the concept of shattering, derive VC-dimensions for a set of two spherical decision functions in 2D-space, i.e., a point is positive if it falls inside one of the spheres, and negative otherwise.
   (b) Problem 4.15(a).

4. Problem 4.14

Grading: problem 1, 2 ~ 2 pts each, problems 3, 4 ~ 3 pts each.
Note: you do not need to submit printout your code as a part of HW solution.