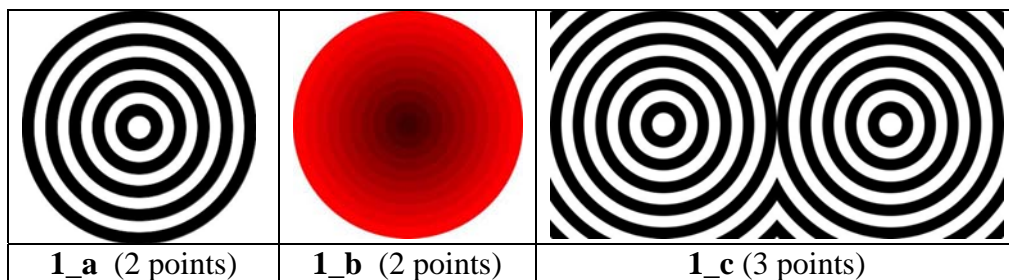Below there are 3 tasks to be programmed. Any help material may be used, on-line, hand-written, book, … The exam duration will be 3 hours. Total points which may be collected is 25. After the exam hand in a folder with your name, and in it with your WORKING .pde files. Make names of programs according to the task numbers.

On 1 December at 13.30 we have a consultancy class where these tasks will be discussed, questions answered.

1. Drawing concentric circles – parametric drawing, transparency

Reproduce the images below, by structure. Use a variable nofCircles as parameter for the program.

1_a (2 points)	**1_b** (2 points)	**1_c** (3 points)

2. Moving concentric circles –mouse driven action, random motion, circular motion

2_a: Make the inner circle center follow the mouse position. The outer circles move less and less, the outmost circle stays in place – see figure below. (3 points)

2_b: Make the above type motion, but instead of the mouse, the inner circle moves randomly. Try to create smooth but random motion. (3 points)

2_c: Make the above type automatic motion such that the small inner circle's center moves around a circle path (4 points).

3. A row of lamps reacting to the mouse – array and Class/Object

Create a number of triangular lamps hanging from the ceiling. The number of lamps should be a parameter of your program. Each lamp has a different colour (defined randomly or by other way). If you click on a lamp (close enough to it), the lamp turns on/off. The light of the lamps mix, see figure below. (7 points: drawing 3 – on 3 off 2)