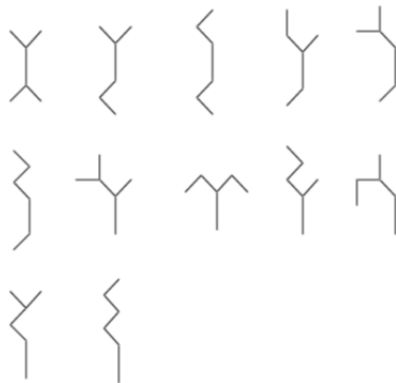
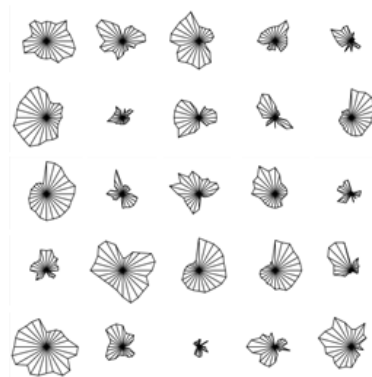


## Scientific Visualization (Assignment 7)

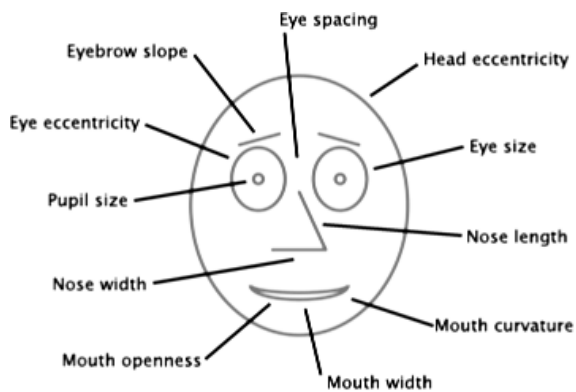
### Exercise 7.1 [4 Points] Glyphs



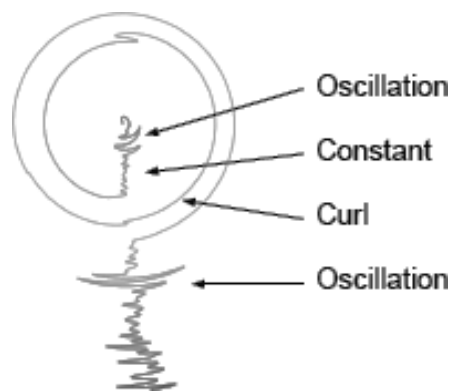
(a) stick figure icons



(b) star plots



(c) Chernoff faces



(d) flow radar glyphs

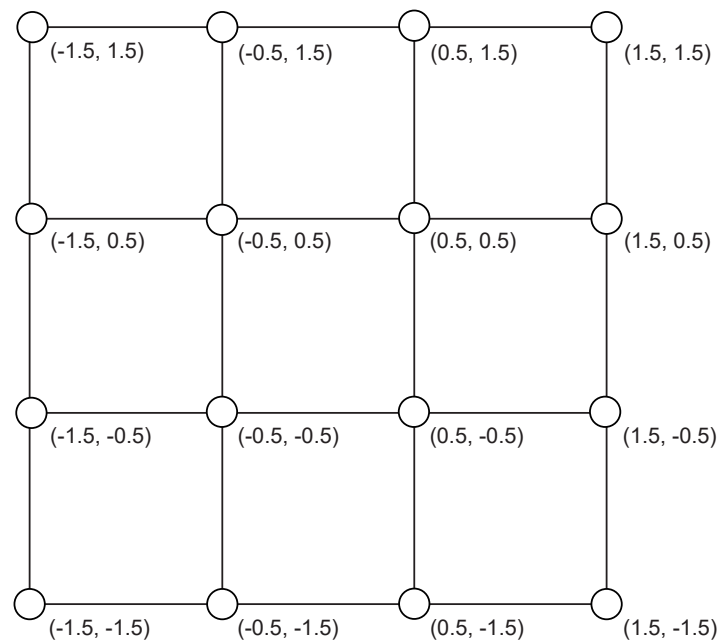
Given the four different glyph designs (a–d) applied to a hypothetical car comparison scenario: The dataset might contain 12 attributes such as maximum speed, horsepower, miles per gallon, weight and so on for all given cars. What are the pros and cons of each approach with respect to this scenario? Inform yourself about the respective approaches, if required.

**Exercise 7. 2** [6 Points] Isolines

A two-dimensional scalar field is given by

$$f(x, y) = \left(x - \frac{1}{2}\right)^2 - y^2.$$

1. Evaluate the function at the sample points specified by the equidistant grid shown below. The coordinates of the grid points are given in parentheses. Round the function values to the first digit after the decimal point.



2. Calculate the isolines for  $f(x, y) = 0$ 
  - (a) ...approximately using the *Marching Squares* algorithm. Sketch the result.
  - (b) ...analytically. Sketch the result and explain the differences to the approximated solution.

**Submission Deadline: 31.05.2019, 23:55**

please hand in your submission through the ILIAS system.