

## LAB SESSION 4

### Outline of lab session:

- brief follow-up from lecture: statistical inference (4L–13/14/15),
- Minitab demonstrations:
  - \* probability distribution calculations: overview on 4L–3/12 for normal/binomial distributions<sup>1</sup>; note also the rules:
$$\binom{n}{0} = 1, \quad \binom{n}{1} = n, \quad \binom{n}{2} = n(n-1)/2.$$
  - \* probability plots and normality tests,<sup>2</sup>
- individual work on exercises, and discussion/questions:  
3:77,79; x:7; 1:110,127,111,113,117,121,145; 5:33; x:4(c); 5:49,51;  
x:8; **home assign.2001:1** (1:123,144; 4:10,60; 5:47,53; x:9; AI:5)
- note: recommended order; **bold** → lab review.
- summary worksheets (for lab review): S.1:1, S.2:2, S.4:3.

### Notes and questions for specific exercises:

- 1.110, 1.111, 1.117, 1.121: for some of these, compute *both* using statistical table and software, then use your preferred method,
- 1.123, 1.127: calculate first the results by standardization, check them afterwards using software.
- 1.145: the data have 224 obs.; **sex** is coded as 1(men)/2(women),
- 5.49, 5.51: compute the probabilities both using statistical table and Minitab/Stata/R,
- home2001.1: data and solution at exercises webpage.

<sup>1</sup> Calc-Probability Distributions and Graph-Probability Distribution Plot menus.

<sup>2</sup> Graph-Probability Plot or Stat-Basic Statistics-Normality Test menus;

Stata commands/R functions for quantile plots: `qnorm`/`qqnorm` (for normality tests → Lecture 4).