

# Crash Course in Statistics for Neuroscience Center Zurich University of Zurich

Dr. C.J. Luchsinger

Solutions to Exercises Chapters 1-5 (only those, where result is a number)

If you have further questions: [jobs@math-jobs.com](mailto:jobs@math-jobs.com) or 043 243 15 08 or in class.

1.3: 23

1.4:  $\binom{30}{2} = 435$

1.5:  $1 - 0.998^{20} \doteq 0.039$

1.7:  $3/8$

1.8:  $1/3$

1.11:  $200/300 * 1/7 \doteq 0.095$

2.1: 0.68472

2.2: 0.3745

2.3: 0.175 and 0.1097

2.5: 0 for  $a < 0$ ,  $a^2$  for  $a \in [0, 1]$  and 1 otherwise

2.6: 0.3125

3.1: 0.4 and 0.36

3.2:  $P[W = 1] = 1/6, P[W = 2] = (5/6) * (1/6), P[W = 3] = (5/6)^2(1/6), P[W = 4] = 1 - (1/6) - (5/6)(1/6) - (5/6)^2(1/6)$ .  $E[W] = 3.1064$ .

3.4: a) 16, b) 276

3.5:  $2/3$  and  $1/18$

3.6: a) 0 and 1; b) 0 and  $n$ ; c)  $g(n) = \sqrt{n}$  (times a constant if you want)

4.1:  $0.5793 - (1 - 0.8413) = 0.4206$

4.2: 0.8413

4.3: 10 %

4.4:  $240 * 0.3618 = 86.84$  and 20.26