Errata for the SECOND EDITION of "A First Look at Rigorous Probability", by Jeffrey S. Rosenthal, World Scientific Publishing Co., 2006.

(Note: throughout, "line $-x$" means x lines from the bottom.)

Errata to Eighth Printing, 2020:

[With thanks to Damir Ferizović, David Scott, Daniel de Souza Severo, and Robert Zimmerman.

- p. 31, line 6: "$f_2 \mathbf{1} I_2$" should be "$f_2 \mathbf{1}_{I_2}$".
- p. 40, Exercise 3.6.16 (c)–(e): "[. . .]" should be the floor function "$\lfloor \ldots \rfloor$" (three times).
- Page 103, proof of Theorem 9.1.1: Note that by replacing X_n by $X_n - C$, it suffices to assume that $X_n \geq 0$.
- Page 108, statement of Theorem 9.3.4: Assume that $\epsilon > 0$.
- Page 113, Exercise 9.5.8 line 2: "$F_t(\{1\})$" should be "$F_t(1)$", and "$F_t(\{2\})$" should be "$F_t(2)$".
- Page 126, line 1: "$E(|X|^k)$" should be "$\mathbf{E}(|X|^k)$".
- Page 127, line -4: The double-integral is unnecessarily repeated twice.
- Page 127, line -1: "$+\int_0^\infty$" should be "$-\int_0^\infty$".
- Page 134: Missing a final closing bracket at the end of the proof of Theorem 11.2.2.
- Page 145, line -1: "Theorem 12.1.4" should be "Lemma 12.1.4".
- Page 159, Exercise 13.4.13: "$\sum_{j \in \mathcal{X}}$" should be "$\sum_{j \in S}$" (twice).
- Page 173 line 5: "Billingley" should be "Billingsley" (of course!).
- Page 185, Exercise 15.3.12: Omit the initial "**(a)**".
- Page 187 line 6: expand "shrunk" to "space has been shrunk".

Errata to Seventh Printing, 2016 (to be corrected in Eighth Printing, 2020):

[With thanks to Damir Ferizović, Daehyun Kim, and Martin Yang.]

- Page 33, line 7: after "for fixed Borel $S \subseteq \mathbf{R}$", add "with $\mathbf{P}(Y \in S) > 0$".
- Page 36 middle: replace the second "$\sum_{k=1}^\infty \mathbf{P}(B_{2k})$" with "$\sum_{k=1}^\infty (1/4)$".

- Page 40, Exercise 3.6.18, line 2: better to change "lim" to "lim inf" to avoid issues of the *existence* of the limit. (Alternatively, the current definition of S_x can be taken to mean the limit *exists* and is $\leq x$.)
- Page 53, Exercise 4.5.10, first line: replace "i.i.d." with "independent", to make the statement stronger, and also because i.i.d. hasn't been introduced yet.
- Page 76, equation (7.2.2): should end with a comma, not a period.
- Page 77, lines 11 and 12 (twice): replace the word "obtaining" with the word "reaching" (for greater clarity).
- Page 85, line -6: strictly speaking, "$\{I_{ij}^{(1)}\}_{i,j\in S}$" should be "$\{I_{ij}^{(1)}\}_{j\in S}$".

Errata to Sixth Printing, 2013 (to be corrected in Seventh Printing, 2016):

[With thanks to Anthony Brooms, Geoffrey Brown, Julian Ziegler Hunts, Owen Lyne, Byron Schmuland, Adrian Torchiana, and Peter Tye.]

- Page 3 middle, change "not used elsewhere in this book" to "not required elsewhere in this book".
- Page 5 middle, change "mathematical rigorous" to "mathematically rigorous".
- Page 21, line 8: "$A \subseteq \mathcal{F}$" should be "$A \in \mathcal{F}$".
- Page 23, line -3: "a algebra" should be "an algebra".
- Page 29, eqn (3.1.2): "$X(w)$" should be "$X(\omega)$".
- Page 40, Exercise 3.6.13, line 2: "P" should be "$\mathbf{P}$", and "X" should be "X_n", and "for all i" should be "for all n".
- Page 46: omit the last two sentences (since we are already assuming that the X_n are non-negative).
- Page 57, line -4: "μ_y" should be "μ_Y".
- Page 87, second half: "Sterling" should be "Stirling" (twice).
- Page 71, Exercise 6.3.1: Replace the first sentence by, "Let μ have density $4x^3\mathbf{1}_{0<x<1}$, and let ν have density $\frac{1}{2}x\mathbf{1}_{0<x<2}$."
- Page 119, lines 1–2: since Y is actually defined as a function on $(0,1)$, it is better to replace "$m(Y(n+1)-Y(n)) < \infty$ discontinuities of size $\geq 1/m$ within the interval $(n, n+1]$" with "$m[Y(1-\frac{1}{n})-Y(\frac{1}{n})] < \infty$ discontinuities of size $\geq 1/m$ within the interval $(\frac{1}{n}, 1-\frac{1}{n})$".
- Page 121, Exercise 10.3.2, line 2: omit the comma just before the period.

- Page 134: the last three lines of the proof of Theorem 11.2.2 are poorly phrased, since $\phi_n(t)$ might be complex, and should be replaced by e.g.: "$n \to \infty$. This means that for any $\epsilon > 0$, for sufficiently large n we have $|nq_n| \le \epsilon$. Hence, as $n \to \infty$ the limit is multiplied by e^{nq_n}, which becomes arbitrarily close to 1 and hence can be ignored."
- Page 147, lines 17–18: "μ" and "ν" should be interchanged (twice).
- Page 178, 2/3 of the way down the page: "only if" and "if" should be interchanged.
- Page 181, Exercise 15.2.7: change "a Markov chain" to "an irreducible Markov chain".
- Page 183, Exercise 15.3.3, line 3: change "A_0" to "A_1".
- Page 187, line −12: "$\frac{1}{n}\ \mathbf{E}\left(Y^{(n)}_{\frac{\lfloor sn\rfloor}{n}} Y^{(n)}_{\frac{\lfloor tn\rfloor}{n}}\right) = \mathbf{E}\left((Z_1 + \ldots + Z_{\lfloor sn\rfloor})(Z_1 + \ldots + Z_{\lfloor tn\rfloor})\right)$" should be "$\mathbf{E}\left(Y^{(n)}_{\frac{\lfloor sn\rfloor}{n}} Y^{(n)}_{\frac{\lfloor tn\rfloor}{n}}\right) = \frac{1}{n}\ \mathbf{E}\left((Z_1 + \ldots + Z_{\lfloor sn\rfloor})(Z_1 + \ldots + Z_{\lfloor tn\rfloor})\right)$".
- Page 192, Exercise 15.6.8, line 2: change "$\int_0^t b\, B_s\, ds$" to "$\int_0^t b\ dB_s$".

Errata to Fifth Printing, 2011 (corrected in Sixth Printing, 2013):

[After teaching from this book again after a five-year break, and also with thanks to Daniel Firka, Julian Ziegler Hunts, Jianlin Zou, Luis Mendo Tomás, and Sebastiaan Janssens.]

- Page 19, Exercise 2.5.6: change "finite unions" to "finite disjoint unions", and note that $\mathbf{P}$ is extended to A_n by finite additivity.
- Page 20: for clarity, replace "distributions" by "measures" (twice).
- Page 22, line 2: change "finite unions" to "finite disjoint unions".
- Page 25, line 1: "setset" should be "subset".
- Page 35, line 4: "considering" should be "consider".
- Page 36, line 9: missing "}".
- Page 36, several places: omit extra $\{\ldots\}$, e.g. "$\{H_n \cap H_{n+1}\}$" should be simply "$H_n \cap H_{n+1}$", etc.
- Page 39, Exercise 3.6.5: for clarity, assume $\mathcal{F} = 2^\Omega$.
- Page 39, line 4: "P" should be "$\mathbf{P}$".
- Page 40, Exercise 3.6.11: the notation "$\sim$" has not yet been introduced, so "$X_n \sim \text{Uniform}(\{1, 2, \ldots, n\})$" should be replaced by "$\mathbf{P}(X_n = i) = 1/n$ for $i = 1, 2, \ldots, n$".
- Page 40, Exercise 3.6.13: should be moved to LATER (since it uses expectation), e.g.

as Exercise 4.5.16. (And "E" should be "$\mathbf{E}$", twice.) It could be replaced by e.g.

> Let $X_1, X_2, \ldots$ be defined jointly on some probability space $(\Omega, \mathcal{F}, P)$, with $\sum_{i=1}^{\infty} i^2 \, \mathbf{P}(i \le X < i+1) \le C < \infty$ for all i. Prove that $\mathbf{P}[X_n \ge n \ i.o.] = 0$.

- Page 46, statement of Theorem 4.2.2: assume the X_n are non-negative, and then omit "$\mathbf{E}(X_1) > -\infty$" (since we haven't yet defined expected values of general random variables).
- Page 46, first line of proof: for greater clarity, replace "(3.1.6)" by "Proposition 3.1.5.(iii)". (Similarly page 107, line 5.)
- Page 46, lines -3 and -2: "E" should be boldface (twice).
- Page 49, exercise 4.3.3(a): change "Z^+ and Z^-" to "$Z^+ - Z^-$".
- Page 54, Exercise 4.5.13(d): replace "$\mathbf{E}(X) < \infty$" by "$0 < \mathbf{E}(X) < \infty$".
- Page 58, Lemma 5.2.1: note that the converse also holds.
- Page 60: introduce the abbreviations "WLLN" and "SLLN".
- Page 65, Exercise 5.5.9, Hint: specify that $y > 0$ for the first part, too.
- Page 66, Exercise 5.5.13, Hint: "r different sums" should be "$r+1$ different sums".
- Page 71, Exercise 6.3.1 is a repeat of Exercise 4.5.1 (page 52), and should be replaced by e.g.:

  > Let μ have density $x^3 \mathbf{1}_{0<x<1}$, and let ν have density $x \mathbf{1}_{0<x<2}$.
  > **(a)** Compute $\mathbf{E}(X)$ where $\mathcal{L}(X) = \frac{1}{3}\mu + \frac{2}{3}\nu$.
  > **(b)** Compute $\mathbf{E}(Y^2)$ where $\mathcal{L}(Y) = \frac{1}{6}\mu + \frac{1}{3}\delta_2 + \frac{1}{2}\delta_5$.
  > **(c)** Compute $\mathbf{E}(Z^3)$ where $\mathcal{L}(Z) = \frac{1}{8}\mu + \frac{1}{8}\nu + \frac{1}{4}\delta_3 + \frac{1}{2}\delta_4$.

- Page 76, Exercise 7.2.5(d): for clarity, prepend "Use the fact that $s(c) = 1$ to".
- Page 85, statement of Theorem 8.1.1, displayed eqn: "nu_{i_0}" should be "ν_{i_0}".
- Page 114, line -1: "β^α" should be "$\beta^{-\alpha}$".
- Page 115, line 1: "t^{x-1}" should be "$t^{\alpha-1}$".
- Page 117, line 2: for clarity, change "distributions" to "measures".
- Page 125, middle of page, displayed equations: final inequality ($\le$) is actually an equality ($=$).
- Page 144, line -5: omit the second "then".
- Page 159, Exercise 13.4.5: Assume $\mathbf{P}\{1\} = \mathbf{P}\{2\} = \mathbf{P}\{3\} = 1/3$.

- Page 159, Exercise 13.4.6: Change "$\mathbf{E}(X \mid \mathcal{G})$ and $\mathbf{E}(Y \mid \mathcal{G})$ need not be independent" to "we might have $\mathbf{E}(XY \mid \mathcal{G}) \neq \mathbf{E}(X \mid \mathcal{G})\ \mathbf{E}(Y \mid \mathcal{G})$".
- Page 165, line 3: "Theorem 14.1.3" should be "Theorem 14.1.5".
- Page 171: for clarity, replace "for a submartingale, the same inequality holds" by "for submartingales, similarly inequalities hold".
- Page 172, line -2: "Then follows" should be "It then follows".
- Page 173, Exercise 14.4.5: Assume $\mathbf{E}|Z| < \infty$.
- Page 181, Theorem 15.2.3: "$\to 0$" should be "$= 0$".
- Page 187: $O(1/n)$ should be $O(1/\sqrt{n})$ (three times).
- Page 192: Exercise 15.6.7: For greater generality, replace "$X_t = at + bB_t$" by "$X_t = X_0 + at + bB_t$" in part (a), and "$N(at,\, b^2 t)$" by "$N(X_0 + at,\, b^2 t)$" in part (b).
- Page 192: Exercise 15.6.8: Replace "$\int_0^t s\, ds$" by "$\int_0^t a\, ds$".
- Page 206 middle, "it suffice to assume" should be "it suffices to assume".

Errata to Fourth Printing, 2010 (corrected in Fifth Printing, 2011):

[With thanks to David Alexander, Martin Hazelton, Andrea Lecchini-Visintini, Gareth Roberts, Igal Sason, Mohsen Soltanifar, and Albert Zevelev.]

- p. 13, line 3 of proof of Lemma 2.3.11: "$\mathcal{B}_m^C$" should be "B_m^C".
- p. 23, Exercise 2.7.3, part (a): "an semialgebra" should be "a semialgebra".
- p. 31, line 5: "$f^{-1}((\infty, x])$" should be "$f^{-1}((-\infty, x])$".
- p. 44, line 1, and again on line 19: "$\sum_j y_j \mathbf{1}_{B_i}$" should be "$\sum_j y_j \mathbf{1}_{B_j}$".
- p. 48, line -5: "non non-negative" should be "not non-negative".
- p. 66, line -8: "Holder" should be "Jensen".
- p. 69, first line of Proposition 6.2.1: "μ_I" should be "μ_i".
- p. 74, line 7: "$F(z)$ for each $z \in \mathbf{R}$" should be "$F(x)$ for each $x \in \mathbf{R}$".
- p. 85, displayed equation in Theorem 8.1.1: "$X_{=} i_1$" should be "$X_1 = i_1$".
- p. 106, line 15: "integral" should be "integrable".
- p. 106, line 17: "$\mathbf{E}(X)$" should be "$\mathbf{E}(X_0)$".
- p. 106, line -1: "$E(Y)$" should be "$\mathbf{E}(Y)$".

- p. 136, Exercise 11.3.2: "Y_n" should be "Y_k" (twice).
- p. 137, conclusion of Theorem 11.4.1: "$\mu \Rightarrow \mu$" should be "$\mu_n \Rightarrow \mu$".
- p. 146, line −6: "mu_{sing}" should be "μ_{sing}".
- p. 155, middle: "$\big\{\{X_1 \le a\} \cap \{X_2 \le b\} : a, b \in \mathbf{R}\big\}$" should be "$\sigma(\big\{\{X_1 \le a\} \cap \{X_2 \le b\} : a, b \in \mathbf{R}\big\})$".
- p. 171, line 11: "$\mathbf{E}\left(\lim_{M\to\infty} U_M^{(\alpha,\beta)} = \infty\right) = \infty$" should be "$\mathbf{E}\left(\lim_{M\to\infty} U_M^{(\alpha,\beta)}\right) = \infty$".
- p. 178, line −6: "$\{X_{t_1}, \ldots, X_{t_k}) \in H\}$" should be "$\{(X_{t_1}, \ldots, X_{t_k}) \in H\}$".
- p. 192, Exercise 15.6.8: replace "$Z_t = \exp[-(a+\frac{1}{2}b^2)t+X_t]$" with "$Z_t = \exp[-2aX_t/b^2]$". (In fact, the first Z_t is also a martingale, but it is less useful than the second version.)
- p. 202, lines 14–15: to avoid subtleties about equivalent repeating decimals, perhaps replace "$c_i = 4$ if $d_i = 5$, while $c_i = 5$ if $d_i \ne 5$" with "$c_i = 2$ if $d_i \ge 5$, while $c_i = 7$ if $d_i < 5$". (This is not strictly necessary, but it makes the argument a bit cleaner.)
- p. 204, Exercise A.3.8: change "$\sum_{i=1}^{\infty}$" to "$\sum_{i=2}^{\infty}$" (twice), and "$\int_1^{\infty}$" to "$\int_2^{\infty}$".
- p. 204, Exercise A.3.9: change "$\sum_{i=1}^{\infty}$" to "$\sum_{i=3}^{\infty}$" (twice).
- p. 207, second line of Exercise A.5.1: "equivalence class" should be "equivalence relation".

Errata to Second Printing, 2007 (corrected in Fourth Printing, 2010):

[With thanks to Orn Arnaldsson, Bent Jørgensen, Chris Mansley, Kohei Nagamachi, Patrick Rabau, Mohsen Soltanifar, Hermann Thorisson.]

- p. 19, Exercise 2.5.6, and also p. 22, proof of Lemma 2.6.2: replace "$A_1, A_2, \ldots \in \mathcal{J}$" by "$A_1, A_2, \ldots$ are finite unions of elements of $\mathcal{J}$".
- p. 23, Exercise 2.6.4: "$\mathbf{P}(\emptyset) = 1$" should be "$\mathbf{P}(\Omega) = 1$".
- p. 23, Exercise 2.7.3, part (b): interchange "semialgebra" and "algebra". (Also, for stylistic improvement, swap parts (a) and (b).)
- p. 30, last line of proof of Proposition 3.1.5: "$\{X \le x\}$" should be "$\{Z \le x\}$".
- p. 33, line 7: second "$\mathbf{P}(X \in T)$" should be "$\mathbf{P}(Y \in S)$".
- p. 39, Exercise 3.6.8: exercise is correct, but special cases like "$d \le b + c - a$" and "$d > b + c - a$" should be modified.
- p. 40, Exercise 3.6.14: insert "independent" before "non-negative".

- p. 74, the proof of Lemma 7.1.2 is sloppily written and should be replaced by:

  > Since F is right-continuous, we have that $\inf\{x; F(x) \geq u\} = \min\{x; F(x) \geq u\}$, i.e. the infimum is actually obtained. It follows that $\phi(u) \leq x$ if and only if $u \leq F(x)$. Hence, since $0 \leq F(x) \leq 1$, we obtain that $\mathbf{P}(\phi(U) \leq x) = \mathbf{P}(U \leq F(x)) = F(x)$.

- pp. 113–114: "Example 9.5.9" should be "Exercise 9.5.9", and similarly for 9.5.11 and 9.5.12.

- p. 114, Exercise 9.5.12: "characteristic function" should be "moment generating function".

- p. 118 middle, the three lines following Figure 10.1.2: replace "g" by "f" (five times).

- p. 118, line -5: "$F(w) \geq b$" should be "$F(z) \geq b$".

- p. 121, Exercise 10.3.5: "four conditions" should be "five conditions".

- p. 126, statement of Lemma 11.1.2: "$\phi(t)$" should be "e^{itx}".

- p. 128, line -7: "π" should be removed from the equation.

- p. 131, line 9: "$\lim_n$" should be "$\lim_k$" (twice); "F_n" should be "F_{n_k}" (twice); and "μ_n" should be "μ_{n_k}".

- p. 136, lines 3–4: the sentence in brackets is somewhat misleading and should be revised or omited.

- p. 136, eqn (11.3.1): "$\mathbf{1}_{|Z_{nk} \geq \epsilon s_n}$" should be "$\mathbf{1}_{|Z_{nk}| \geq \epsilon s_n}$"

- p. 166, lines 6–7: "bets \$1 on tails, then if they win they bet \$2 on heads" should be "bets \$1 on heads, then if they win they bet \$2 on tails".

- p. 173, Exercise 14.4.1: should say "$\mathbf{P}(Z_i = 1) = \mathbf{P}(Z_i = 0) = 1/2$", and "$X_1 = 2Z_1 - 1$".

- p. 174, Execise 14.4.12(a), Hint: "$\mathbf{P}(\tau \geq 3m)$" should be "$\mathbf{P}(\tau > 3m)$".

Errata to First Printing, 2006 (corrected in Second Printing, 2007):

[With thanks to Joe Blitzstein, Saad Siddiqui, Emil Zeuthen.]

- p. 9, line -10: "*all* intervals" should be "*all* subsets".

- p. 18, eqn. (2.5.2): "$P(B)$" should be "$\mathbf{P}(B)$".

- p. 19, the last sentence in the proof of corollary 2.5.4 is questionable (since we may have $D_n \notin \mathcal{J}$), and should be replaced by:

It then follows from (2.5.5) that

$$\mathbf{P}\left(\bigcup_n B_n\right) \;=\; \mathbf{P}\left(\bigcup_n D_n\right) \;=\; \mathbf{P}\left(\bigcup_n \bigcup_{i=1}^{k_n} J_{ni}\right) \;=\; \sum_n \sum_{i=1}^{k_n} \mathbf{P}(J_{ni})\,.$$

On the other hand,

$$B_n \;=\; \bigcup_{m \le n} \bigcup_{i=1}^{k_m} (J_{mi} \cap B_n)$$

and the union is disjoint, with $J_{ni} \subseteq B_n$, so

$$\mathbf{P}(B_n) \;=\; \sum_{m \le n} \sum_{i=1}^{k_m} \mathbf{P}(J_{mi} \cap B_n) \;\ge\; \sum_{i=1}^{k_n} \mathbf{P}(J_{ni} \cap B_n) \;=\; \sum_{i=1}^{k_n} \mathbf{P}(J_{ni})\,,$$

and hence

$$\sum_n \mathbf{P}(B_n) \;\ge\; \sum_n \sum_{i=1}^{k_n} \mathbf{P}(J_{ni}) \;=\; \mathbf{P}\left(\bigcup_n B_n\right)\,.$$

- p. 20, eqn. (2.5.10): "$(\infty, x]$" should be "$(-\infty, x]$".
- p. 22, line -10: "P_1" should be "$\mathbf{P}_1$", and "P_2" should be "$\mathbf{P}_2$".
- p. 151, first line of Section 13.1: "We being" should be "We begin".
- p. 162, last line: "$X_n = 5$" should be "$X_n = -5$".
- p. 205, Exercise A.4.5: "contraction" should be "contradiction".
- p. 206, line 4: "$g(x)/h(x)$" should be "$|g(x)/h(x)|$".
- p. 206, line 7: "limsup" should be "lim".

ERRATA FOR THE ONLINE SOLUTIONS FILE:

[With thanks to Danny Cao, Felix Pahl, Byron Schmuland, and David Scott.]

[CORRECTED AND UPDATED by Xinyu Huo, August 2023.]

- Exercise 2.7.14(a): "for all $a \neq b$" should be "for all $\{a, b\} \in \mathcal{J}$".
- Exercise 2.7.22(a): add a description of Ω, and extend $\mathcal{F}$ to allow for separate subsets A and B, not just a single subset A.

- Exercise 3.6.6(a): solution is not quite correct (and will be revised).
- Exercise 3.6.16(c): in the displayed equation, "$\sum_{n=1}^{\infty}(\frac{1}{n})^2$" should be "$2\sum_{n=1}^{\infty}(\frac{1}{n})^2$".
- Exercise 3.6.18: in the first displayed equation, "$\cap_{s=1}^{\infty}\cup_{N=m}^{\infty}\cap_{n=N}^{\infty}\{\frac{1}{n}\sum_{i=m}^{n}\mathbf{1}_{A_i} \leq x+\frac{1}{s}\}$" should instead be "$\cap_{s=1}^{\infty}\cap_{N=m}^{\infty}\cup_{n=N}^{\infty}\{\frac{1}{n}\sum_{i=m}^{n}\mathbf{1}_{A_i} \leq x+\frac{1}{s}\}$".
- Exercise 4.5.10: solution is not correct, and should be replaced by the one at:
  `http://probability.ca/jeff/ftpdir/Ex4.5.10sol.pdf`
  Also, in the first expression for $\mathbf{E}(S^2)$, omit the factor of "2".
- Exercise 7.4.6: In the displayed formula for $s_c(a)$, each "W_n" should be "W_1", and each "S_c" should be "s_c".
- Exercise 8.5.8: In lines 4 and 5, the second "$P_i(\cdots)$" should be "$\mathbf{P}(\cdots \mid X_1 = k)$".
- Exercise 8.5.10(a): Replace all sentences after the first with: "So, $\mathbf{P}_i(X_n = i_0\ i.o.) > 0$, i.e. $\lim_{k\to\infty}\mathbf{P}_i(\#\{n \geq 1 : X_n = i_0\} \geq k) > 0$. So, from Lemma 8.2.2, $\lim_{k\to\infty} f_{ii_0}(f_{i_0i_0})^{k-1} > 0$. This is only possible if $f_{i_0i_0} = 1$. Hence, i_0 is recurrent."
- Exercise 8.5.20(c): this is not quite correct as stated, since the chain might not be irreducible even on the state spaces S_r. But it is still true that there is at least one stationary distribution on each S_r, hence at least two stationary distributions in total.
- Exercise 9.5.10, last line: "b" should be "s" (twice).
- Exercise 9.5.14(a): answer should be 1, not ∞.
- Exercise 13.4.6: solution is incorrect (and will be revised).
- Exercise 13.4.10: solution is incorrect (and will be revised). For a better example, let $\mathbf{P}(X = 1, Y = 1) = \mathbf{P}(X = 1, Y = -1) = \mathbf{P}(X = -1, Y = 2) = \mathbf{P}(X = -1, Y = -2) = 1/4$. Then X and Y are clearly not independent, but $\mathbf{E}(Y|X) = 0 = \mathbf{E}(Y)$.