1. Misprints

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<td>26</td>
<td>L10_</td>
<td>$P(R) = \ldots$ (not $P(\Omega)$)</td>
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<td>33</td>
<td>L5_</td>
<td>$\int_0^x \gamma(x) , d\gamma(x)$ ((\gamma) is missing)</td>
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<td>57</td>
<td>L12_</td>
<td>$\sum_{k=1}^n Y_k \leq X$ for all (n)</td>
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<td>75</td>
<td>L10_</td>
<td>$r \sum_{n=1}^{\infty} \cdots \leq EXr \leq 1 + r \sum_{n=1}^{\infty} \cdots$</td>
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<td>76</td>
<td>L5_</td>
<td>function, and that (g') is monotone. Then</td>
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<td>L9_</td>
<td>$\sum_{n=1}^{\infty} \cdots \leq 1$ (not $[239]$)</td>
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<td>338</td>
<td>L1_</td>
<td>However, the absolute value of the real part of the ...</td>
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<td>341</td>
<td>L2_</td>
<td>$L_1(n) = \cdots = \frac{1}{2} \rightarrow \frac{1}{2} \neq 0$</td>
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<td>342</td>
<td>L15_</td>
<td>$\sum_{n=1}^{\infty} P(</td>
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<td>353</td>
<td>L8_</td>
<td>$\frac{d}{\varepsilon}$ (not (\frac{r}{\varepsilon}))</td>
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<td>$\sup_{x&gt;0} (</td>
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<td>361</td>
<td>L5, 11</td>
<td>Theorem 4.4.1 (not (4.4.1))</td>
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<td>363</td>
<td>L4_</td>
<td>$e^{1/18}$ (not $e^{5/144}$)</td>
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<td>$\sum_{k=1}^{\infty} \left( \sum_{j=1}^{k} X_j I{</td>
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<td>L4, 5</td>
<td>Williams' (not William's)</td>
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<td>527</td>
<td>L4_</td>
<td>$\alpha = P(\text{Player B is the winner...})$ (not A)</td>
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<tr>
<td>527</td>
<td>L3_</td>
<td>player A is the winner (not B)</td>
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<tr>
<td>528</td>
<td>L8_</td>
<td>$\alpha = P(\text{Player B is the winner...})$ (not A)</td>
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</table>

2. Corrections

*Letter from J. Prochno, hereby acknowledged:*

**Lemma 3.1, Page 14** Let \((\Omega, A, \mu)\) be a finite measure space and \(\mathcal{F}\) be an algebra on \(\Omega\) with \(\sigma(\mathcal{F}) = A\). Then, for every \(\varepsilon > 0\) and any \(A \in A\), there exists \(B \in \mathcal{F}\) such that

\[
\mu(A \triangle B) < \varepsilon.
\]

**Proof.** We define

\[
\mathcal{D} := \{ A \in A : \forall \varepsilon > 0 \exists A_\varepsilon \in \mathcal{F} : \mu(A \triangle A_\varepsilon) < \varepsilon \}.
\]

Obviously, \(\mathcal{F} \subseteq \mathcal{D}\), because for if \(A \in \mathcal{F}\) and \(\varepsilon > 0\), then we can just choose \(A_\varepsilon := A \in \mathcal{F}\), which gives \(\mu(A \triangle A_\varepsilon) = 0 < \varepsilon\). We now show that \(\mathcal{D}\) is a Dynkin system. In view of the definition of a Dynkin system, we do this in three steps.

**Step 1.** \(\Omega \in \mathcal{D}\), because \(\mathcal{F}\) contains \(\Omega\), as it is an algebra and, as we saw before, \(\mathcal{F} \subseteq \mathcal{D}\).

**Step 2.** Let \(A \in \mathcal{D}\). We need to show that \(A^c \in \mathcal{D}\). So let \(\varepsilon > 0\). Since \(A \in \mathcal{D}\), there exists some \(A_\varepsilon \in \mathcal{F}\) so that \(\mu(A \triangle A_\varepsilon) < \varepsilon\). Because \(C \triangle A = C^c \triangle A^c\), we may choose \(B_\varepsilon := A_\varepsilon^c \in \mathcal{F}\) (because \(\mathcal{F}\) is an algebra) and obtain

\[
\mu(A^c \triangle B_\varepsilon) = \mu(A^c \triangle A_\varepsilon^c) = \mu(A \triangle A_\varepsilon) < \varepsilon.
\]
This means \( A^c \in \mathcal{D} \).

**Step 3.** Let \( (A_i)_{i \in \mathbb{N}} \in \mathcal{D}^\mathbb{N} \) be a sequence of (pairwise disjoint) sets. We need to show that \( A := \bigcup_{i=1}^\infty A_i \in \mathcal{D} \), that is, if \( \varepsilon > 0 \), then we need to find a set \( B_\varepsilon \in \mathcal{F} \) so that \( \mu(A \Delta B_\varepsilon) < \varepsilon \). So let \( \varepsilon > 0 \). First of all, by the continuity from below, there exists an \( n_\varepsilon \in \mathbb{N} \) so that

\[
\mu\left( A \setminus \bigcup_{i=1}^{n_\varepsilon} A_i \right) < \frac{\varepsilon}{2}. \tag{S.0.1}
\]

In fact, the sequence \( \bigcup_{i=1}^n A_i, n \in \mathbb{N} \) is increasing and \( \bigcup_{i=1}^n A_i \uparrow A \), that is, \( \lim_n \bigcup_{i=1}^n A_i = A \), which means that by the continuity from below, there exists \( n_\varepsilon \in \mathbb{N} \) so that

\[
\mu(A) - \mu\left( \bigcup_{i=1}^{n_\varepsilon} A_i \right) < \frac{\varepsilon}{2}.
\]

Therefore, from the basic properties of a measure, it follows that

\[
\mu\left( A \setminus \bigcup_{i=1}^{n_\varepsilon} A_i \right) = \mu(A) - \mu\left( \bigcup_{i=1}^{n_\varepsilon} A_i \right) < \frac{\varepsilon}{2}. \tag{S.0.2}
\]

Now, since \( (A_i)_{i \in \mathbb{N}} \in \mathcal{D}^\mathbb{N} \), for \( \delta := \frac{\varepsilon}{2n_\varepsilon} \) there exists a sequence \( (A_i,\delta)_{i \in \mathbb{N}} \in \mathcal{F}^\mathbb{N} \) so that, for all \( i \in \mathbb{N} \),

\[
\mu(A_i \Delta A_i,\delta) < \delta. \tag{S.0.3}
\]

Because

\[
\left( \bigcup_{i=1}^{n_\varepsilon} A_i \right) \Delta \left( \bigcup_{i=1}^{n_\varepsilon} A_i,\delta \right) \subseteq \bigcup_{i=1}^{n_\varepsilon} (A_i \Delta A_i,\delta),
\]

we obtain from Inequality \( S.0.2 \),

\[
\mu\left( \left( \bigcup_{i=1}^{n_\varepsilon} A_i \right) \Delta \left( \bigcup_{i=1}^{n_\varepsilon} A_i,\delta \right) \right) \leq \sum_{i=1}^{n_\varepsilon} \mu(A_i \Delta A_i,\delta) < n_\varepsilon \delta. \tag{S.0.3}
\]

It now follows from Inequalities \( S.0.1 \) and \( S.0.3 \) that, choosing \( B_\varepsilon := \bigcup_{i=1}^{n_\varepsilon} A_i,\delta \),

\[
\mu\left( A \setminus B_\varepsilon \right) < \frac{\varepsilon}{2} + n_\varepsilon \delta = \frac{\varepsilon}{2} + n_\varepsilon \frac{\varepsilon}{2n_\varepsilon} = \varepsilon.
\]

This shows that \( A \in \mathcal{D} \) and completes the proof of the theorem. \( \square \)