Probability II
MAP6473 4810

**Home-B**

Prof. JLF King
10Sep2015

HONOR CODE: *"I have neither requested nor received help on this exam other than from my professor."*

Signature:

**Please.** General instructions/notation are on the CHECKLIST. Please type every 2nd or 3rd line. (Don't Scrunch!) Exam is due **by 1PM, Friday, 23Apr2004**.

**B1:** For a prob.meas. $\mu$, let $\tilde{\mu}$ be $\mu$ "flipped"; so $\tilde{\mu}(B) := \mu(-B)$. Write the char.fnc $\varphi_{\tilde{\mu}}$ ITOf (In Terms Of) $\varphi_\mu$.

Let $\langle\mu;7\rangle$ and $\langle\mu;7,3\rangle$ be a translation and a translation-scaling of $\mu$:

$$\langle\mu;7\rangle(B) := \mu(B-7);$$
$$\langle\mu;7,3\rangle(B) := \mu(3B-7).$$

Describe the char.fncs $\varphi_{\langle\mu;7\rangle}$ and $\varphi_{\langle\mu;7,3\rangle}$ ITOf $\varphi_\mu$.

**B2:** Please do Billingley:**26.1** P.353. Use $A,B$ for $a,b$. The "lattice" is $L := A + B\mathbb{Z}$, a scaled translation of the integers. For each integer $n$, there is a mass $m_n := \mathsf{P}(\mathsf{X} = A+Bn)$; they sum to 1.

**B3:** Billingley:**26.2** P.353.

**B4:** Billingley:**26.5** P.354.

**B5:** Bill:**26.15** P.355. Remember the tool of partitioning a large compact interval into short subintervals, where all the separation points are continuity-points of $\mu$.

**B6:** Bill:**24.6** P.326. As it was stated in class, the pointwise Ergodic Theorem applies to $\mathbb{L}^1$-fncs.

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| **B1:** | ___ ___ | 70pts |
| **B2:** | ___ ___ | 70pts |
| **B3:** | ___ ___ | 70pts |
| **B4:** | ___ ___ | 70pts |
| **B5:** | ___ ___ | 70pts |
| **B6:** | ___ ___ | 70pts |
| **Total:** | ___ ___ ___ | 420pts |

*Please PRINT your name and ordinal. Ta:*

Ord: