

C5.3, Statistical Mechanics

Problem Sheet 1

Mathematical Institute, University of Oxford

January 4, 2021

1. Problem 1.3 in Sethna: *Waiting Time Paradox*.
 2. Problem 2.2 in Sethna: *Photon Diffusion*.
 3. Problem 2.10 (a) and (b) in Sethna: *Polymers and Random Walk*.
 4. Problem 3.5 in Sethna: *Hard Sphere Gas*.
 5. Problem 3.6 in Sethna: *Connecting Two Microscopic Systems*.
 6. Problem 3.8 in Sethna: *Microcanonical Energy Fluctuations*.
 7. Problem 3.9 in Sethna: *Gauss and Poisson*.
 8. Problem 3.11 in Sethna: *Maxwell Relations*.
 9. Problem 4.2 in Sethna: *Liouville vs the Damped Pendulum*.
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