

CALIFORNIA INSTITUTE OF TECHNOLOGY
Control and Dynamical Systems

CDS 202

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Winter 2009

Problem Set #1

Issued: 8 Jan 09
Due: 15 Jan 09

Reading: Abraham, Marsden, and Ratiu, Ch 1.

Problems:

1. MTA 1.2-3: Show that every separable metric space is second countable.
2. MTA 1.2-8: Metrics on function spaces.
3. MTA 1.3-7: Representations of the circle.
4. MTA 1.3-8: Identity map between discrete and trivial topologies.
5. MTA 1.4-5: Continuous mappings and their graphs.
6. MTA 1.5-8(i) and MTA 1.6-2: Compactness and connectedness of $SO(3)$.