

## A.2 Lecture 2 Outline

1. Review of lecture 1
  - (a) Why are you here?
  - (b) Where are you (charts)?
  - (c) What is a Riemannian manifold (example  $\mathcal{B}$ )?
2. Questions for today:
  - (a) Where are you (mathematically/in your mind/in the course)?
    - i. Have I given you something (with which you can connect)?
    - ii. Have I given you too much?
    - iii. Have I given you enough?
  - (b) Chart questions:
    - i. Do you have location data for me?
    - ii. Do you have drawing/illustration methods?
3.  $\mathcal{B}$  questions:
  - (a) Do you agree that finding lengths of paths ( $\text{length}_{\mathcal{B}}$ ), angles between paths ( $\theta_{\mathcal{B}}$ ), and areas enclosed by paths ( $\text{area}_{\mathcal{B}}$ ) is “doing” geometry?
  - (b) Do you have questions on the regularity of paths/functions?
4. Example  $\mathcal{C}$