

Lecture 1: What is a knot?

Note Title

12/23/2009

$$S^n = \{x \in \mathbb{R}^{n+1} : \|x\| = 1\}$$

$$= \mathbb{R}^n \cup \{\infty\}$$

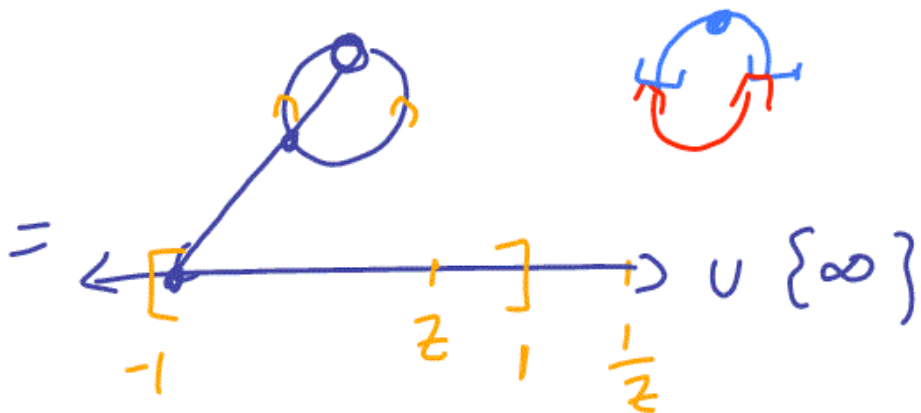
$$= D^n \cup D^n \text{ where } D^n = \{x \in \mathbb{R}^n : \|x\| \leq 1\}$$

$$= \partial D^{n+1}$$

$$S^0 = \{-1, 1\}$$



$$S^1 = \bigcirc$$



$$\left[\frac{1}{2} \right] \cup \{\infty\} \cong \left[-1 \right]$$

A diagram showing the identification of the interval $\left[\frac{1}{2}, \infty \right)$ with the interval $\left[-1, \frac{1}{2} \right)$. A blue line segment is drawn from $\frac{1}{2}$ to ∞ , and another blue line segment is drawn from -1 to $\frac{1}{2}$. A red arrow points from the right end of the first segment to the right end of the second segment, indicating the identification.