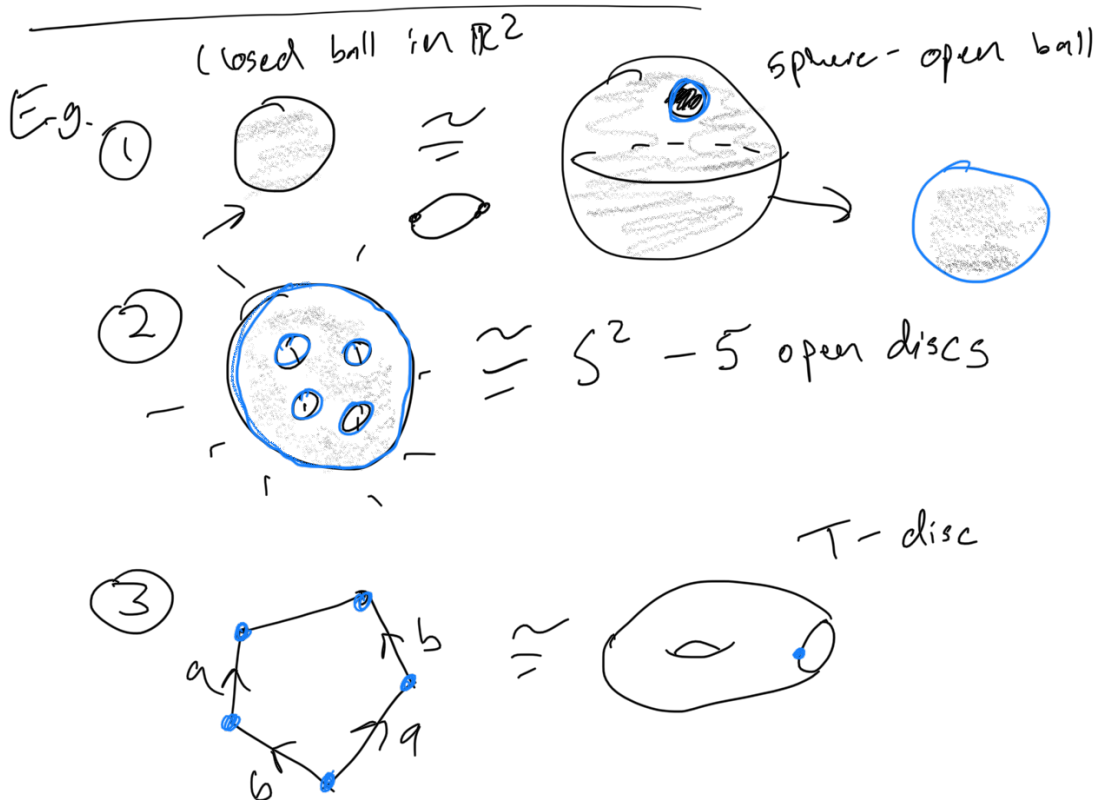


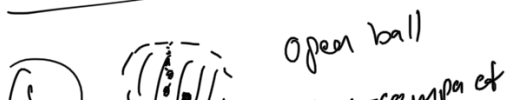
Classification of surfaces with boundary

Thm Let X be a connected, compact surface with boundary. Then X is homeomorphic to one of

- (i) sphere w/ finitely many ^{open} discs removed
- (ii) connect sum of n projective planes, w/ finitely many discs removed
- (iii) connect sum of n tori, w/ finitely many discs removed



Non-compact surfaces



① \mathbb{R}^2 homeo to interior of a compact surface with boundary

