1 topology, the main object of study are manifo	ds. These are spaces such that zooming in on any given F	unt,
ey look like a line (1-movifold, or curve), a plane h	(2-manifold, or surface), 3D-space (3-manifold), etc.	•
xcimple: A 2-manifold:	$\begin{array}{c} \cdot \\ \cdot $	•
since #		•
re are two 1-manifolds up to homeomorphism: (Guess)	•
- The infinite real line	- "non-cland"	•
- The circle, or S^1		•
- Disjoint unions of lines and circles		•
oof that the line and the circle if you remove any point	from the line, it breaks up into two convicinnents. It was	•
are not homeomorphic remove any point from	the circles it still has one component.	•
	Public many of the many intermetion Country Read of	
while 1 - manifolds up to nomeomorphism are so easy,	Ters mane them more theresiting. Consider closed 1-ma	Vi j a(CS
embedded into SD-space. These are cauted tinks:	· · · · · · · · · · · · · · · · · · ·	•
"Uhkast" "Trefoil" "figure 8" "5-foil"	Knots (homeomorphic to the circle)	•
	(homeomorphic to 1 or more circles)	•
"Hop link" "Whitebood link"		•
	H. L.	L



We will typically represent links by planar diagrams like the ones above. It is relatively easy two links are isotopic (if they are): Theorem (Reidemeister) two link diagrams represent the same kinst if and only if they are related by Reidemeister moves. Example: D = DRI : RII -RT : Example : Different way: $C(\mathcal{O}) \rightarrow C(\mathcal{O})$ $\left(\begin{array}{c} \\ \end{array} \right)$ \leftarrow (c) Theorem: RE'= & - ~ follows from RI, RII, RII Exercised

A link							•		•		•	• •								
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	A link	A link with th	A link with three co	A link with three componen	(172) A link with three components : .mplify the following diagram	(172) A link with three components such t mplify the following diagrams with the following diagrams with the following diagrams with the following diagrams with the following diagram of the follow	(n>2) A link with three components such that r mphily the following diagrams until 6)	(172) A link with three components such that remov mplify the following diagrams until obta	(n>2) A link with three components such that removing au mphily the following diagrams until obtaining b) ((172) A link with three components such that removing any one implify the following diagrams until obtaining the	(n>2) A link with three components such that removing any one comp mplify the following diagrams until obtaining the unkn	(1722) A link with three components such that removing any one component implify the following diagrams until obtaining the unknot,	(n72) A link with three components such that removing any one component yields implify the following diagrams until obtaining the unknot, indicat	A link with three components such that removing any one component yields two mplify the following diagrams until obtaining the unknot, indicating (a)	(172) A link with three components such that removing any one component yields two sepo implify the following diagrams until obtaining the unknot, indicating each	(172) A link with three components such that removing any one component yields two separate implify the following diagrams until obtaining the unknot, indicating each F	A link with three components such that removing any one component yields two separate unk mplify the following diagrams until obtaining the unknot, indicating each Reide	A link with three components such that removing any one component yields two separate unknots	A link with three components such that removing any one component yields two separate unknots: mplify the following diagrams until obtaining the unknot, indicating each Reidemeister b) (6)	A link with three components such that removing any one component yields two separate unknots: .