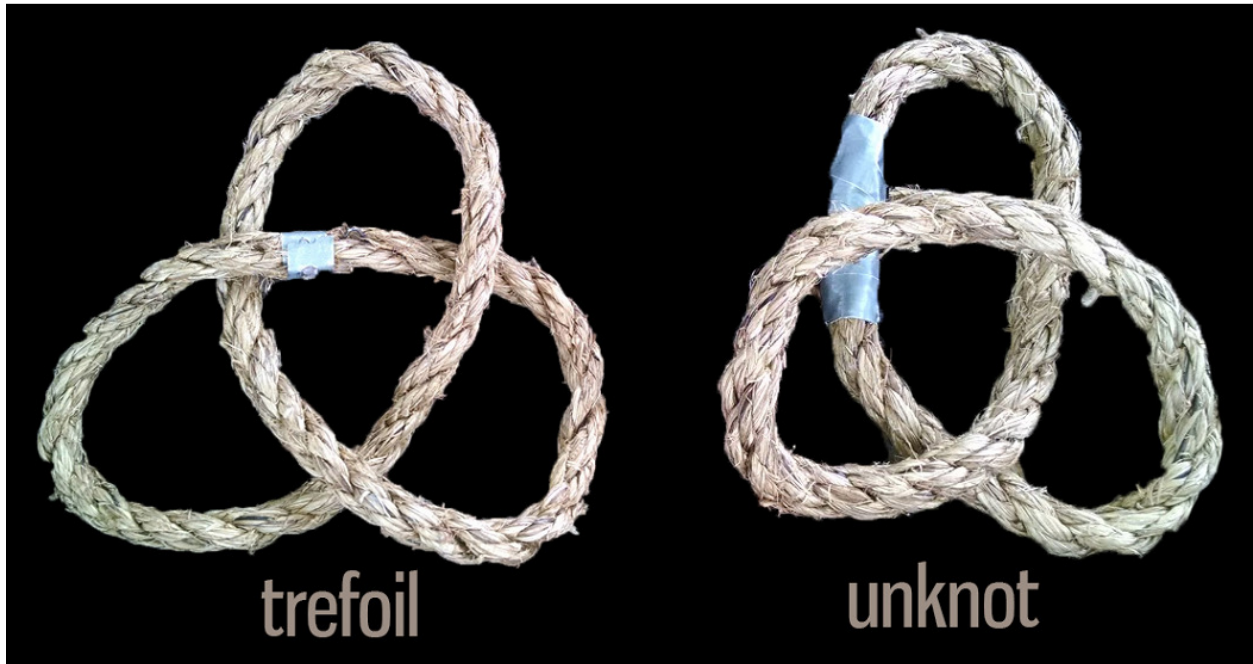


The trefoil knot



Here is an illustration side by side with an unknotted curve in 3-dimensional space. No matter what one tries, it is not possible to manipulate the knotted curve so that it becomes unknotted. In topology one shows this by computing the fundamental groups of the complements of both curves in the 3-sphere. This fundamental group is abelian for an unknotted curve but nonabelian for a knotted one like the trefoil knot on the left in the picture.