**What is...the Reidemeister theorem?**

Or: Knotting stings in 2d

# A knot is a string in three-space



trefoil      unknot
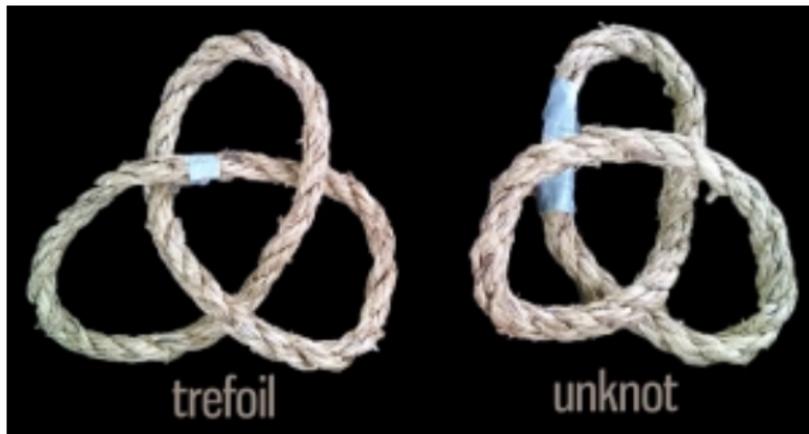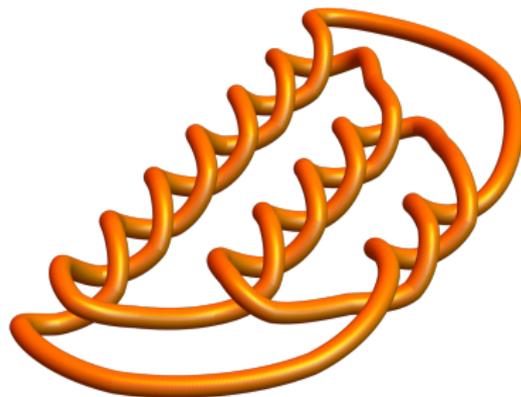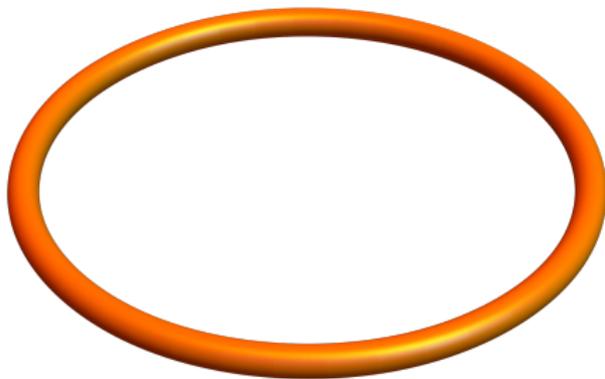
# A 2d shadow
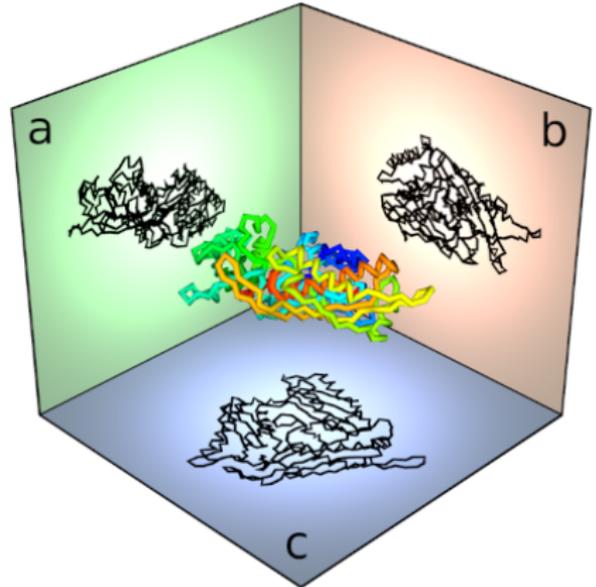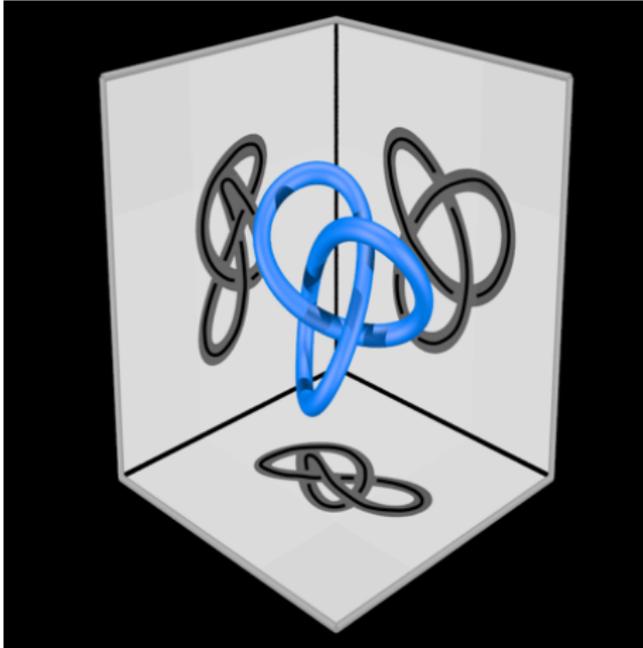


Projections (called knot/link diagrams) are handy, but might vary drastically

**Easy operations on diagrams – the Reidemeister moves I, II and III**
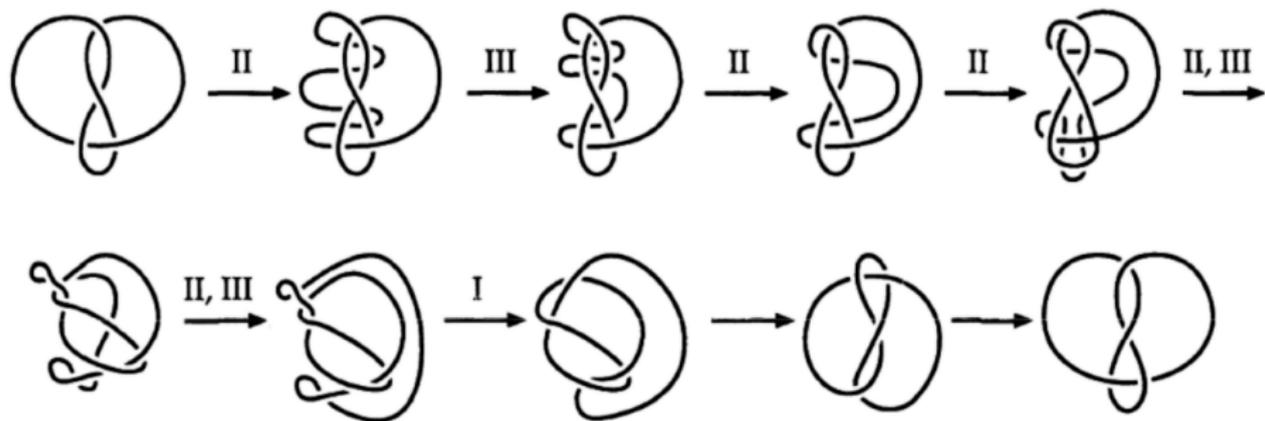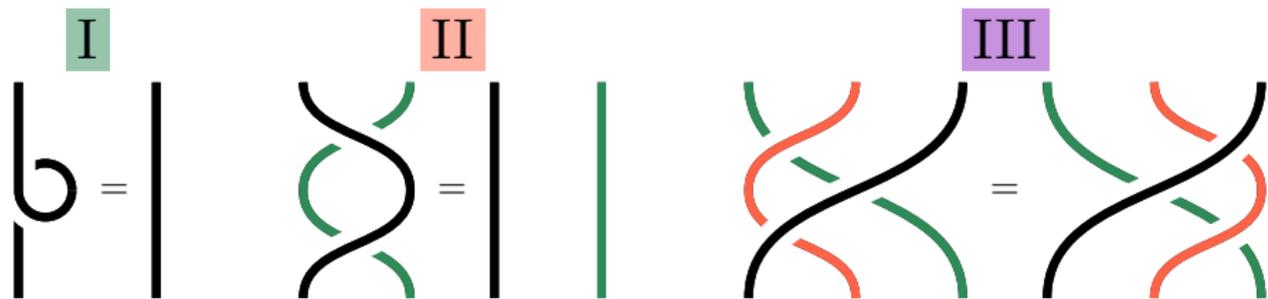
**Enter, the theorem!**

Two knot/link diagrams represent the same knot/link if and only if there is a finite number of Reidemeister I , II and III moves transforming one into the other.

Amazing: All isotopies follow from those three moves only

Strictly speaking one should include plain isotopies such as
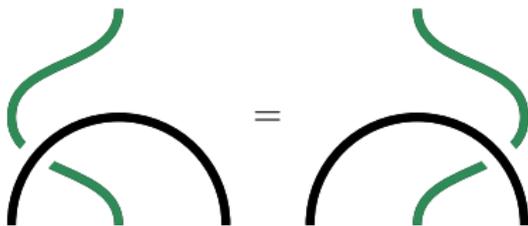


into the Reidemeister moves...

# The culprit and Wolfgang Haken's Gordian knot
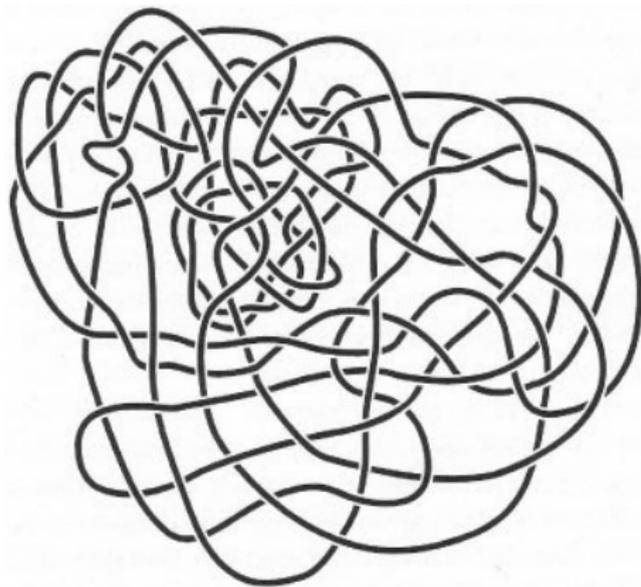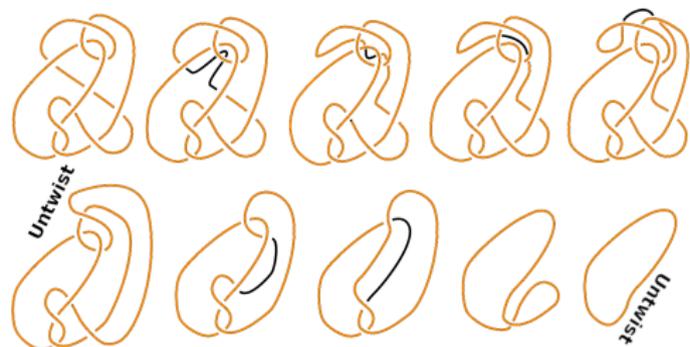


These demon knots are not knotted! Homework: do the unknotting Reidemeister moves for the right beast...

**Thank you for your attention!**

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I hope that was helpful.