

**Undergraduate Math Club  
Winter 2006  
2<sup>nd</sup> floor Nesbitt Common Room  
Jan. 19, 4:10-5:00pm  
(free pizza and pop, as always)**

## **Seifert surfaces and knot invariants**

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### **Abstract**

A knot is a simple closed curve in 3-dimensional space. Two knots are considered to be equivalent if one can be smoothly deformed into the other without passing the knot through itself. Given this flexibility, knots can be difficult to characterize. Thus, we develop invariants to distinguish knots from one another.

A Seifert surface for a knot is a surface whose boundary is the knot. We will present examples and prove that these surfaces exist for any knot. These surfaces can be used to generate invariants to distinguish knots, and we will give some applications to the operation of “knot composition.”

