

# 17-1350-AKT Tue Jan 10, Gentle Hours 1-2: Class Introduction, Knots and the Jones Polynomial

January 8, 2017 9:12 AM

Class Introduction as in <http://drorbn.net/AcademicPensieve/Classes/17-1350-AKT/About.html>.

Brief intro to knots, invariants, Jones.

A quick implementation of Jones.

Jones:  $\nearrow \mapsto q$   $(-q^2 \searrow)$   $\bigcirc \mapsto q + q^{-1}$

$\nwarrow \mapsto -q^{-2} \searrow + q^{-1}$

R1  $\begin{matrix} 3 \uparrow \\ \curvearrowright \\ 1 \end{matrix} \mapsto X_{223}^+$   $\begin{matrix} 3 \\ \curvearrowleft \\ 1 \end{matrix} \mapsto X_{1223}^-$

R2  $\begin{matrix} 1 \uparrow \\ \curvearrowright \\ 2 \end{matrix} \begin{matrix} 3 \uparrow \\ \curvearrowright \\ 5 \end{matrix} \mapsto X_{1524}^+ X_{2536}^-$   $\begin{matrix} 3 \uparrow \\ \curvearrowleft \\ 5 \end{matrix} \begin{matrix} 2 \uparrow \\ \curvearrowleft \\ 1 \end{matrix} \mapsto X_{4352}^+ X_{5162}^-$

R3  $\begin{matrix} 9 \uparrow \\ \curvearrowright \\ 5 \end{matrix} \begin{matrix} 16 \uparrow \\ \curvearrowright \\ 2 \end{matrix} \begin{matrix} 3 \uparrow \\ \curvearrowright \\ 7 \end{matrix} \mapsto X_{4251}^+ X_{7382}^+ X_{8695}^+$   $\begin{matrix} 2 \\ \curvearrowright \\ 9 \end{matrix} \begin{matrix} 16 \uparrow \\ \curvearrowright \\ 2 \end{matrix} \begin{matrix} 3 \uparrow \\ \curvearrowright \\ 5 \end{matrix} \mapsto X_{7584}^+ X_{8291}^+ X_{5312}^+$