1165-14-208 **Allen Knutson***, 515 Malott Hall, Ithaca, NY 14850, and **Paul Zinn-Justin**. *Puzzles compute the Euler characteristic of the intersection of Bruhat cells.*

In 2017, we showed that 1-, 2-, and 3-step Schubert calculus puzzles could be derived as a $q \to 0$ limit of an A_2, D_4, E_6 quantum integrable system (respectively). We show here that the $q \neq 0$ systems compute a richer product of "Segre-Schwartz-MacPherson" classes most naturally defined not on those flag manifolds, but on their cotangent bundles. As a consequence, we obtain (again for up to 3-step) a positive formula for the Euler characteristic of the intersection of three generically situated Bruhat cells (times the usual K-theoretic sign, although, this is not a K-theoretic calculation). We conjecture that this signed positivity holds for general G/P. (Received January 18, 2021)