

Mirror symmetry conjecturally associates to a Fano orbifold a (very special type of) Laurent polynomial. Laurent inversion is a method for reversing this process, obtaining a Fano variety from a candidate Laurent polynomial. We apply this to construct new Fano 3-folds with terminal Gorenstein quotient singularities. In this series of talks, I will go through some of the basics of toric geometry to showcase how one can use combinatorial data to systematically build geometric objects. We will restrict our attention to the well-studied Fano case, for which there is concrete evidence that the mirror theorem holds in many cases.