1139-16-395   **Ellen Kirkman*** (`kirkman@wfu.edu`), Box 7388 Wake Forest University, Winston-Salem, NC 27109, and **Luigi Ferraro**, **W. Frank Moore** and **Robert Won**. *Examples of Reflection Hopf Algebras.* Preliminary report.

The Shephard-Todd-Chevalley Theorem states that when a finite group G acts linearly on a commutative polynomial ring $A = k[x_1, \ldots, x_n]$ over a field k of characteristic zero, the invariant subring A^G is a commutative polynomial ring if and only if G is generated by reflections. More generally, let H be a semisimple Hopf algebra that acts on an Artin-Schelter regular algebra A so that A is an H-module algebra, the grading on A is preserved, and the action of H on A is inner faithful. When A^H is Artin-Schelter regular, we call H a reflection Hopf algebra for A. We present examples of such pairs (A, H), for two and three-dimensional AS regular algebras A, and the Hopf algebras $H = \mathcal{A}_{4m}$ and $H = \mathcal{B}_{4m}$ defined by A. Masuoka, the algebras $H = H_{2n^2}$ defined by D. Pansera, and some of the 16-dimensional Hopf algebras H classified by Y. Kashina. (Received February 17, 2018)