1077-05-256   **Jessica Striker***, jessica@math.umn.edu, and **Nathan Williams**, will3089@umn.edu. *Promotion and rowmotion.*

We present an equivariant bijection between two actions—promotion and rowmotion—on order ideals in certain posets. This bijection simultaneously generalizes a result of R. Stanley concerning promotion on the linear extensions of two disjoint chains and recent work of D. Armstrong, C. Stump, and H. Thomas on root posets and noncrossing partitions. We apply this bijection to several classes of posets, obtaining equivariant bijections to certain objects under rotation. In particular, we obtain an equivariant bijection between plane partitions of height two under rowmotion and noncrossing partitions with a fixed number of blocks under rotation. (Received August 16, 2011)