Group Actions on Matroids

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Let f be an action of S_n on aM by the linear extension of its action on $\{x_1, \ldots, x_n\}$

Proposition 1.1. *For the graded ring*

$$A = R[x_1, ., x_n] = R \oplus R(x_1, \ldots, x_n) \oplus R(x_i x_j \mid 0 < i < j \leq n) \oplus \ldots$$

if S_n acts on A by the linear extension of its action on $\{x_1, \ldots, x_n\}$.

Proof. □