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Proof of the Strict Monotone 5-step Conjecture.

A computer search through the oriented matroid programs with dimension 5 and 10 facets shows that the maximum strictly monotone diameter is 5. Thus $\Delta_{sm}(5, 10) = 5$. This enumeration is analogous to that of Bremner and Schewe for the non-monotone diameter of 6-polytopes with 12 facets. Similar enumerations show that $\Delta_{sm}(4, 9) = 5$ and $\Delta_m(4, 9) = \Delta_m(5, 10) = 6$. We shorten the known non-computer proof of the strict monotone 4-step conjecture. (Received September 09, 2018)