

# Michigan Math Club

Thursday at 4pm in the Nesbitt Room

Free Pizza and Pop

## Self-Distributivity

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Abstract for 27 February

Abstract algebra studies algebraic structures: properties of sets with interesting operations. A set  $M$  with a binary operation is a *magma*. Here is an operation you likely never heard of: a binary operation  $*$  on a finite (or infinite) set  $M$  is said to be *(left) self-distributive* or *left-distributive* if it satisfies the identity  $x * (y * z) = (x * y) * (x * z)$ . Such an algebraic operation is generally non-commutative and non-associative. What is it good for? Sets with such operations come up in many areas of mathematics, including group theory, topology, and mathematical logic. We explain this, give some examples, and present an unsolved problem.

