1081-55-361 **Gregory T Mezera*** (gtm@gwu.edu). *Every group is a distributive set in a monoid of binary operations.*

Abstract.
Let X be a set and $Bin(X)$ the set of all distributive operations on X. We say that $S \subset Bin(X)$ is a distributive set of operations if all pairs of elements $*_\alpha, *_\beta \in S$ are right distributive, that is, $(a *_\alpha b) *_\beta c = (a *_\beta c) *_\alpha (b *_\beta c)$ (we allow $*_\alpha = *_\beta$).

J.Przytycki raised the question of which groups can be realized as distributive sets. The initial guess that we may embed any group G into $Bin(X)$ for some X was brought into question after making an observation that if $* \in S$ is idempotent ($a * a = a$), then $*$ commutes with every element of S. The first noncommutative subgroup of $Bin(X)$ (the group S_3) was found computationally in October of 2011 by Y.Berman.

Here we show that any group can be embedded in $Bin(X)$ for $X = G$ (as a set). We also discuss (representation theoretic) criteria for minimal embeddings, and give an example where X has six elements and $Bin(X)$ contains a non-abelian subgroup. (Received February 14, 2012)