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*On the existence of a class of  $(v, k, \lambda)$  difference sets with  $k < 350$ ,  $n = k - \lambda = m^2$ ,  $m = 8, 9, 11, 14$  and  $v = 0 \pmod{68}$ .*

In 2005, Ken Smith and his under graduate student, Strom Borman showed that  $(204, 29, 4)$  difference sets do not exist by exploring factor groups of order 68. Based on this result, we investigate  $(v, k, \lambda)$  difference sets satisfying  $k < 350$ ,  $n = k - \lambda = m^2$ ,  $m = 8, 9, 11, 14$  and  $v = 0 \pmod{68}$ . Using number theory and representation theory, it turns out that most of the groups of  $v$  do not admit the respective difference sets. (Received September 01, 2009)