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**Luise-Charlotte Kappe, Marcin Mazur, Gabriela Mendoza and Michael B. Ward\***  
(wardm@wou.edu), Mathematics Department, Western Oregon University, Monmouth, 97361. *On solvable minimal non- $p$ -closed and non- $p$ -exponent closed groups.*

Let  $p$  be a prime. A group is called  $p$ -closed if it has a normal Sylow  $p$ -subgroup and it is called  $p$ -exponent closed if the elements of order dividing  $p$  form a subgroup. Let  $E$  be a group theoretic property. We say a group is a minimal non- $E$ -group, if it is not an  $E$ -group but its proper subgroups and proper homomorphic images are  $E$ -groups.

We present the (somewhat surprising) relationship between the classes of minimal non- $p$ -closed and minimal non- $p$ -exponent closed groups. Those classes contain only solvable and simple groups. We focus on solvable groups. The simple groups will be discussed in another talk at these meetings. (Received September 18, 2009)