



# THEOREM OF THE DAY



**Sylow's Theorems** *Let  $G$  be a finite group of order  $p^n m$  where  $p$  is a prime not dividing  $m$ . Then*

- 1.  $G$  contains subgroups of order  $p^n$ , any two of which are conjugate;*
- 2. any subgroup of  $G$  of  $p$ -power order is contained in a subgroup of order  $p^n$ ;*
- 3. the number subgroups of  $G$  of order  $p^n$  is congruent to 1 (mod  $p$ ) and divides  $m$ ;*

This theorem will have a 1-page description at [theoremoftheday.org](http://theoremoftheday.org) soon. Find out how to get news of new theorem descriptions here: [www.theoremoftheday.org/Resources/Resources.htm](http://www.theoremoftheday.org/Resources/Resources.htm).

