Problem Set 1

Orville D. Hombrebueno

February 21, 2019

1. Does the group Z_{41}^*
   a. has a group of order 3?
      - Yes. $|Z_4^*| = 3$, Z_4^* is a subset of Z_{41}^* and is a group since:
        G1. $a, b \in Z_4^*$; $a \cdot_4 b \in Z_4^*$
        G2. a, b and $c \in Z_4^*$; $(a \cdot_4 b) \cdot_4 c = a \cdot_4 (b \cdot_4 c)$
        `ex.` `$$`
        `\begin{aligned}`
        `AR(p): Y_i &= c + \epsilon_i + \phi_i Y_{i-1} \dots \\`
        `Y_{i} &= c + \phi_i Y_{i-1} \dots`
        `\end{aligned}`
        `$$`