Mat 370: HW Quiz 3

Instructions: You have 25 minutes to complete the quiz. Write your response on separate paper, then scan and upload it to Blackboard. If you have problems submitting, send it to me in an email.

1. True or False: If G is a group of order n, then $a^{-3n} = e$ for any $a \in G$.

2. True or False: $\mathbb{Z}_r \times \mathbb{Z}_s \cong \mathbb{Z}_{rs}$ for any $r, s \geq 1$.

3. Find the cosets of $\langle 16 \rangle$ in $\mathbb{Z}_{24}$.

4. Find all abelian groups of order 600 up to isomorphism.

5. Let K be a subgroup of G. Prove that if $gKg^{-1} = K$ for all $g \in G$ then $gK = Kg$ for all $g \in G$.