Attendance Quiz for Dr. Z.'s MathHistory for Lecture 16 (due no later than 15 minutes after class)

NAME: (print!) _____

Email to DrZlinear@gmail.com right after class

Subject: p16

with an attachment p16FirstLast.pdf

Part I: List all the "attendance questions" during the lecture, followed by your answers.

Part II:

1. List all the permutations of $\{1, 2, 3\}$. Explain why it is a group. It is called S_3.

2. Explain why the following set of permutations, let's call it H, on $\{1, 2, 3\}$ is a subgroup of S_3.

$$ H = \left\{ \begin{pmatrix} 1 & 2 & 3 \\ 1 & 2 & 3 \end{pmatrix} \;,\; \begin{pmatrix} 1 & 2 & 3 \\ 2 & 1 & 3 \end{pmatrix} \right\} \quad . $$

3. Find all the **left-cosets** of H. How many are there? Explain why they all of the same number of elements, and can't share any members.

4. Explain why this is an illustration of Largrange's theorem.