

PRINT Your Name: \_\_\_\_\_

There are 7 problems (10 parts) on 5 pages. Each part is worth 10 points.

1. State Lagrange's Theorem.

If  $G$  is a finite group and  $H$  is a subgroup of  $G$ , then the number of elements of  $H$  divides the number of elements of  $G$ .

2. Define "cyclic group".

The group  $G$  is a cyclic group if there is an element  $g \in G$  such that every element of  $G$  has the form  $g^n$  for some integer  $n$ .