

Student No.

Name:

All problems, unless otherwise specified, are from A First Course in Abstract Algebra 7ed by Fraleigh. You do NOT need to hand in solutions to the problems in parentheses.

Extra problems.

1. Let $(V, +, \cdot)$ be a vector space over a field \mathbb{F} . Show that the set of invertible linear transformations from V to itself

$$\text{GL}(V) = \{f : V \rightarrow V \mid f \text{ is linear and invertible} \}$$

is a group, where the group operation is the composition of linear transformations.

2. Show that the dihedral group D_{2016} , which is the symmetry group of the regular polygon with 2016 edges, is generated by two elements. (See also 44 of §8 below.)

§6 (12), (13), (15), (32), 49, 51, 52, 53, 55, (56)

§8 (18), (21), (35), (44), 49, 53a