# SOLUTIONS TO SELECTED EXERCISES FROM HERSTEIN

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## 1. Things Familiar and Less Familiar

1.1. **A Few Preliminary Remarks**.

(1)

1.2. **Set Theory**.

(1)

1.3. **Mappings**.

(1)

1.4. $A(S)$.

(1)

1.5. **The Integers**.

(1)

1.6. **Mathematical Induction**.

(1)

1.7. **Complex Numbers**.

(1)

## 2. Groups

2.1. **Definitions and Examples of Groups**.

(1)

2.2. **Some Simple Remarks**.

(1)

2.3. **Subgroups**.

(1)

2.4. **Lagrange's Theorem**.

(1)

2.5. **Homomorphisms and Normal Subgroups**.

(1)

2.6. **Factor Groups**.

(1)

2.7. **The Homomorphism Theorems**.
   (1)

2.8. **Cauchy's Theorem**.
   (1)

2.9. **Direct Products**.
   (1)