

**Instructions**

- Answer each question completely; justify your answers.
  - This assignment is due at 17:00 on Thursday March 26th in Assignment Box #37.
1. Exercise 5.6, part (a).
  2. Exercise 5.10.
  3. A resolvable STS( $v$ ) is called a Kirkman Triple System of order  $v$ , i.e., a KTS( $v$ ). Prove that if a KTS( $v$ ) exists then  $v \equiv 3 \pmod{6}$ .
  4. Exercise 6.1, part (a).
  5. Exercise 6.2.
  6. Use the Skolem Construction to build a STS(13).