Exercise #7

(範圍: Rings, Groups)

1. Prove (b) and (e) of the theorem on page 142 of lecture notes. (15%)

2. Prove the theorem on page 146 of lecture notes. (20%)

3. P. 685: 12 (only for (b)). (20%)

4. Prove that in Z_n, $[a]$ is a unit if and only if $\gcd(a, n) = 1$. (15%)

5. P. 704: 4. (15%)

6. Solve $x \equiv 8 \pmod{11}$, $x \equiv 9 \pmod{12}$, and $x \equiv 10 \pmod{13}$. (15%)