PMAT 3370 – Number Theory — Assignment #8
Fall 2007

Instructions

- Answer each question completely; justify your answers.
- This assignment is due at: 5:00 pm on Friday November 23rd.

1. Exercise 5.1, parts (k) to (n)
2. Solve for x: $13x \equiv 11 \pmod{19}$, $2x \equiv 9 \pmod{21}$, $20x \equiv 3 \pmod{23}$, $11x \equiv 2 \pmod{25}$.
3. Exercise 6.3.
4. Exercise 6.6.
5. Exercise 6.8.
6. Exercise 6.12.
7. Exercise 6.13.
8. Exercise 6.14.
9. Exercise 6.15.
10. Exercise 6.16.
11. Exercise 6.18.
12. Exercise 6.20.
13. Exercise 6.24.
14. Suppose that Bob uses the RSA cryptosystem, and has published his $n = 554111$ and $e = 520049$. Bob receives an encrypted message $C = 47051$ from Alice. Decrypt this message.