

Unless otherwise specified, the problems listed below are from *Discrete Mathematics and Its Applications, Sixth Ed.*, by Kenneth H. Rosen.

1. **[30 pts]** Section 1.1 34, 38, 42, 44, 48, 50
2. **[5 pts]** Section 1.1 Problems 56, 58.
3. **[10 pts]** Section 1.1 Problems 64.
4. **[30 pts]** Section 1.2 Problems 8, 14, 20, 31, 34, 39
5. **[15 pts]** Section 1.2 Problems 42, 44, 55, 60 (if the statement is satisfiable, give values of the variables which make the statement true).
6. **[10 pts]** Install Sage on your computer and use it factor the polynomial $x^{125} - 1$ over the integers.
[Note: this only requires two lines of Sage code.]