Solve the following problems from Srednicki.

- 1 (10 points) Problem 3.2 on page 29.
- $\mathbf{2}$  (10 points) Problem 3.3 on page 29.
- **3** (20 points) Problem 3.4 on pages 29-30.
- 4 (30 points) Problem 3.5 on page 30.
- 5 (20 points) Problem 7.3 on page 53.
- 6 (10 points) Problem 7.4 on page 53.