

## Homework Assignment for Week 04

1. Section 10.7: odd problems in problem 41-55.
2. Find the first few terms of the power series representation of

$$\frac{1 - x^2 + x^4 - \cdots}{1 - \frac{x^2}{2!} + \frac{x^2}{4!} - \cdots}$$

3. Section 10.8: Problems 7, 9, 11, 15, 29, 33, 35, 41.
4. Let

$$f(x) = \begin{cases} 0, & x = 0 \\ e^{-1/x^2}, & x \neq 0 \end{cases}$$

It is known that  $f^{(n)}(0) = 0$  for all  $n$ . Verify this for  $f'(0)$  and  $f''(0)$ .