Discussion problem assignment:

第一题：

1. For a real continuous-time periodic signal and its FS

$$x(t) \xleftrightarrow{\text{FS}} a_k$$

Try to determine the signal $x(t)$ given the following information:

1) The fundamental period of the signal is T = 4 and the average power is 2.

2) The average magnitude of the signal within a period is 1.

3) It is known that $a_1 = \sqrt{2}/2$

第二题：

2. For a discrete-time periodic signal $x[n]$ with N = 7

$$x[n] = \begin{cases} 2, & n = -1, 0, 1 \\ 1, & n = -2, 2 \\ 0, & n = -3, 3 \end{cases}$$

1) Determine the signal's FS.

2) Check the FS's property for real signal.

3) Find the highest frequency among all harmonics.