1. W 11.2
2. W 11.3
3. W 11.4

4. Consider the rate 1/3 convolutional code with

\[ g^{(1)} = (1 1 0) \]
\[ g^{(2)} = (1 0 1) \]
\[ g^{(3)} = (1 1 1) \]

(a) Draw the state diagram of the encoder.
(b) Compute the column distance function of the code. What is the free distance of the code?
(c) Find the weight enumerator, \( T(X, Y) \) of the code.

*W denotes problems from Wicker text first number is chapter, second number is problem*