Information Theory - Homework 2

1. Consider two communication channels which **never** deliver the actual input:
    1. Flip a coin and send the result on a channel, but the channel always changes the result (in case of *head* it always outputs *tails*, and vice-versa)
    2. Throw a dice and send the result on the channel. The channel never delivers the actual input value, but outputs at random one of the other five values.

For each of these channels:

a. Draw the graph of the channel.
b. What is the input entropy H(X)?
c. What is the average information transmitted on the channel?
d. Argue how useful you think the channel is for communication.