CDMA with Noise

In the class, we hav[...] an ideal system. However, in reality, we have much more complicated scenari[...] noise.

Consider the scenari[...] he receiver. The chipping sequence is (-1 -1 -1 +1 -1 +1 +1 +1). Suppose the se[...] the signal sent will be (-1 -1 -1 +1 -1 +1 +1 +1). In the channel, noise is add[...] the received signal will be $(-1+n_1\ -1+n_2\ -1+n_3\ +1+n_4\ -1+n_5\ +1+n_6\ +1+n_7\ +1+n_8)$[...] se terms. They are independently normally distributed with zero mean and σ^2 va[...] $\sigma^2 = 1$. Formally, $n_i \sim N(0, 1)$. You should know the normal distribution in a pre[...]

After the computing the inner product at the receiver, what "value" does the receiver derive? If the value is smaller than 0, it is decoded as -1, otherwise, it is decoded as 1. Use the provided table to find the probability that it is wrongly decoded as -1.

The tail probability (Q function) of a standard normal distribution is given in the attached q_function.pdf.