

Concept Question 2-9: Why is the length of the convolution of two discrete-time signals not equal to the sum of the lengths of the two signals?

In continuous time the convolution of two signals is equal to the sum of their lengths, because the duration of the interval $[a, b]$ is $b - a$. But in discrete time, the duration of the interval $[a, b]$ is $b - a + 1$. This is discussed in detail in Section 2-5.4.