

Concept Question 7-10: Why is convolution property #7 in Table 7-4 (duration) different in discrete time?

Because duration is defined differently in discrete time and continuous time. In continuous time, the duration of interval $3 \leq t \leq 5$ is $5 - 3 = 2$, while in discrete time the duration of $3 \leq n \leq 5$ is $5 - 3 + 1 = 3$. This is because the elements of $3 \leq n \leq 5$ are $\{3,4,5\}$.