Figure 3.1
Figure 3.2

System

Input $x(t)$  

Output $y(t)$
Figure 3.3
Figure 3.4
\[ f(t) = \int_{-\infty}^{+\infty} f(\tau) \cdot \delta(t-\tau) \cdot d\tau \]
\[ \delta(t-\tau) \]

\[ h(t-\tau) \]

Figure 3.6
Figure 3.7
\[ δ(t-τ) = \frac{H(t-τ)}{H(t-τ) + s(t-τ)} \]
Figure 3.9
Figure 3.10
Figure 3.11
The Complex s-plane

$s=+j\omega$ (imaginary)

$s=0$

$s=\sigma$ (real)

$\sigma$ (large)  $\sigma$ (small)
Figure 3.13

The diagram shows the s-plane with a point at $-1/T$ and an arrow labeled $\exp(-t/T)$. The s-plane is defined as the complex plane with real part $\sigma$ and imaginary part $j\omega$. The point $-1/T$ is marked on the real axis.
Figure 3.15
\[ \frac{A}{sT + 1} \]

Figure 3.16

- \( k \) increasing
- \( \sigma \)
- \( \omega \)
- \( x \)
- \( -(1+kA)/T \)
- \( -1/T \)
Figure 3.17

Amplitude Distribution

\[ p(x) = \exp\left(-\frac{x^2}{2\sigma^2}\right) \]

Power Spectrum

Autocorrelation Function

\[ \phi(\tau) = \delta(\tau) \]
Figure 3-20

GWN

x(t)

R

C

y(t)

RESPONSE