

Problem 1.1: Find the total energy and the power averaged over all time for

(a) $x(t)$ in Figure 1

(b) $g(t)$ in Figure 1

Problem 1.2: Find the total energy and the power averaged over all time for

(a) $h(t)$ in Figure 1

(b) $y[n]$ in Figure 1

Problem 1.3: For each of the signals, use a straightedge to plot the signal. Label both axes and include the origin for reference. Label all important features. Then, find the total energy and the power averaged over all time.

$$(a) x(t) = \begin{cases} 2t, & t \geq 0 \\ 0, & \text{else} \end{cases}$$

$$(b) g[n] = \begin{cases} \left(\frac{1}{3}\right)^{n/2}, & n \geq 0 \\ 0, & \text{else} \end{cases}$$

Problem 1.4: Consider the signal $x[n] = \begin{cases} \left(\frac{1}{2}\right)^{n/2}, & n \geq 1 \\ 0, & \text{else} \end{cases}$. Use a straightedge to plot the signal. Label both axes and include the origin for reference. Label all important features. Then, find the total energy and the power averaged over all time.

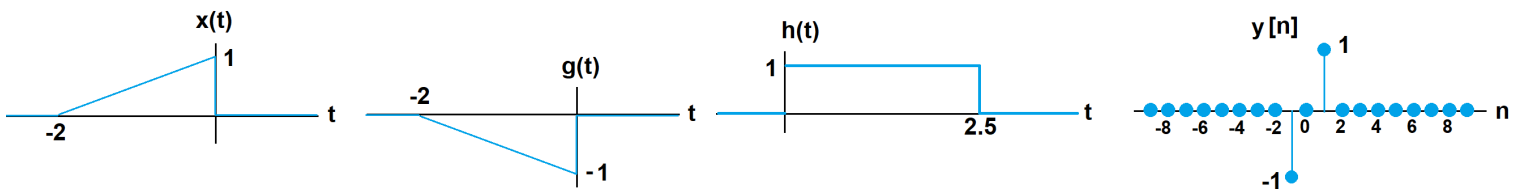


Figure 1

Optional, but Testable, Problems: From the textbook, Problem 1.54 (a,b,d).