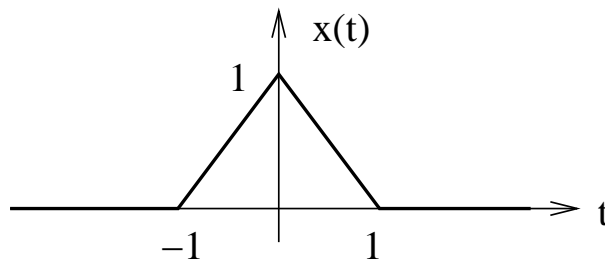


Practice for Quiz 6

1. Let $x(t)$ and $h(t)$ be signals with unit area.
 - (a) Prove that $x(t) * h(t)$ has unit area.
 - (b) Give an illustrative example.

2. Consider $x(t)$ given in



For which ω is $\text{Re}[X(j\omega)] < 0$? Why?

3. Determine

$$\int_{-\infty}^{\infty} \left(\frac{2 \sin(\omega T)}{\omega} \right)^2 d\omega.$$