1) Verify that $h(t) = \int_{-\infty}^{\infty} H(f)e^{j2\pi ft}df$.

2) Verify that if $h(t) = K, H(f) = K\delta(f)$ and that if $h(t) = K\delta(t), H(f) = K$.

3) Verify that if $h(t) = \sum_{n=-\infty}^{\infty} \delta(t - nT), H(f) = \frac{1}{T}\sum_{-\infty}^{\infty} \delta\left(f - \frac{n}{T}\right)$.

4) Verify that, if $h(t) \leftrightarrow H(f), h(t - t_0) \leftrightarrow H(f)e^{-j2\pi ft_0}$.

5) Verify that, if $h(t)$ is even, then $H(f)$ is real, and that if $h(t)$ is odd, then $H(f)$ is imaginary.

6) Verify that $x(t) * h(t) = \int_{-\infty}^{\infty} h(t) * x(t - \tau)d\tau$.