Solution

Let $x(t)$ be bandlimited, i.e.

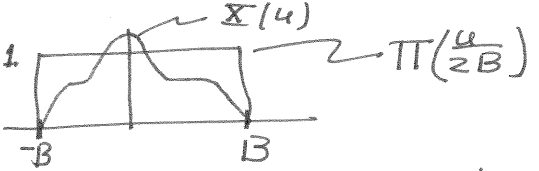
$$\int_{-\infty}^{\infty} x(t)\, e^{-j2\pi ut}\, dt = 0 \quad \text{for } |u| > B$$

Evaluate (Simplify)

$$y(t) = x(t) * 2B \operatorname{sinc} 2Bt$$

Solution

$$Y(u) = X(u) \cdot \Pi\left(\frac{u}{2B}\right)$$



Thus: $Y(u) = X(u)$ and $y(t) = x(t)$