6 The ~~recomstr~~ reconstruction formula is given by

$$s(t) = \sum_{n=-\infty}^{+\infty} s[n] \operatorname{sinc}(2Wt - n)$$

where
$$\operatorname{sinc}(z) \triangleq \begin{cases} \dfrac{\sin \pi z}{\pi z} & z \neq 0. \\ 1 & z = 0. \end{cases}$$

~~Let~~ Since $h^I(\tau), h^Q(\tau), x^I(t), x^Q(t), y^I(t), y^Q(t)$ are band limited baseband signals, and so are $h(\tau)$, $x(t)$ and $y(t)$. Using the sampling theorem we therefore have

$$h(\tau) = \sum_{n=-\infty}^{\infty} h[n] \operatorname{sinc}(2W\tau - n).$$

$$x(t) = \sum_{n=-\infty}^{\infty} x[n] \operatorname{sinc}(2Wt - n)$$

$$y(t) = \sum_{n=-\infty}^{\infty} y[n] \operatorname{sinc}(2Wt - n) \quad \text{— (8)}$$

$$h[n] \triangleq h\left(\tau = \frac{n}{2W}\right), \quad x[n] \triangleq x\left(t = \frac{n}{2W}\right),$$
$$y[n] \triangleq y\left(t = \frac{n}{2W}\right).$$

Therefore in (7) we have

$$y[n] = y\left(t = \frac{n}{2W}\right) = \frac{1}{2} \int h(\tau)\, x\left(\frac{n}{2W} - \tau\right) d\tau. \quad \text{— (9)}$$

using the sampling theorem expansions from (8) in (9) we have