1.6

a) $x - t$

Define $\Psi(x) = 1$

$\Psi(t) = p(t)$

$\Psi(x,t) = p(x|t)$

$\Rightarrow \Psi(x,t)\,\Psi(x)\,\Psi(t) = P(x,t)$

b) $x - t \leq \begin{matrix} y_1 \\ \vdots \\ y_N \end{matrix}$

Define $\Psi(x) = 1$

$\Psi(t) = p(t)$

$\Psi(x,t) = p(x|t)$

$\Psi(y,t) = \exp\left(\theta_t^T y\right)$

$\Psi(y) = 1$

$\Rightarrow \Psi(x,t)\,\Psi(x)\,\Psi(y)\,\Psi(t,y) = P(x,y,t)$