$$e^t \to \frac{1}{p-1}$$

$$\frac{1}{\sqrt{\pi t}} \to \frac{1}{\sqrt{p}}$$

By multiplication theorem:

$$\frac{1}{p-1} \cdot \frac{1}{\sqrt{p}} \to \int_0^t e^{t-u} \frac{du}{\sqrt{\pi u}} = \frac{2e^t}{\sqrt{\pi}} \int_0^t e^{-u} d\left(\sqrt{u}\right) =$$

$$= \frac{2e^t}{\sqrt{\pi}} \int_0^t e^{-v^2} d\left(v\right) = e^t erf\left(\sqrt{t}\right)$$

By shift theorem:

$$erf\left(\sqrt{t}\right) \to \frac{1}{p\sqrt{p+1}}$$