(18) Calculem $\mathcal{L}\left[\frac{e^{-2t}}{\sqrt{t}}\right](s)$. Per a quins valors de $s$ existeix la transformada?

$$F(t) = \mathcal{L}\left[\frac{e^{-2t}}{\sqrt{t}}\right] = \mathcal{L}\left[\frac{1}{\sqrt{t}}\right]_{s \to s+2} = \mathcal{L}\{t^{-1/2}\}_{s \to s+2} =$$

$$= \frac{\Gamma(-1/2+1)}{s^{-1/2+1}}\Big|_{s \to s+2} = \frac{\Gamma(1/2)}{\sqrt{s+2}} = \frac{\sqrt{\pi}}{\sqrt{s+2}}$$ existeix si $s > -2$.