$$f(t) = \mathcal{L}^{-1}[F(p)]$$

$$= \mathcal{L}^{-1}\left[\frac{1}{p(p-2)}\right]$$

$$= \frac{1}{2}\mathcal{L}^{-1}\left[\frac{1}{p-2} - \frac{1}{p}\right]$$

$$= \frac{1}{2}\mathcal{L}^{-1}\left[\frac{1}{p-1}\right] - \frac{1}{2}\mathcal{L}^{-1}\left[\frac{1}{p}\right]$$

$$= \frac{1}{2} \cdot e^{-t} - \frac{1}{2} \cdot 1$$

$$= \boxed{\frac{1}{2}(e^{-t} - 1)}$$