

# Exercice2\_SDZ

January 26, 2022

## 1 Série 7 - Exercice 2

### 2. Evaluer l'expression

(a)  $\mathcal{L}^{-1} \left[ \frac{-2}{s+1} \right]$

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

(c)  $\mathcal{L}^{-1} \left[ \frac{1}{s^4 - 4s^2} \right]$

#### 1.1 (a)

$$f(t) = -2e^{-t}$$

#### 1.2 (b)

$$F(s) = \frac{1}{s-1} - \frac{1}{s}$$

$$f(t) = e^t - 1$$

#### 1.3 (c)

$$F(s) = \frac{1}{s^2} \frac{1}{s^2 - 4}$$

$$F(s) = \frac{1}{4} \left( \frac{1}{2} \frac{2}{s^2 - 4} - \frac{1}{s^2} \right)$$

$$f(t) = \frac{1}{8} (\sinh(2t) - 2t)$$