4.11b

lördag 3 februari 2024 11:34

$$\frac{s}{(s+1)(s-2)} = \frac{A}{s+1} + \frac{B}{s-2}$$

$$s = s(A+B) + (A-2B)$$

$$A+B=1 \qquad B = 1/3 \quad A = \frac{2}{3}$$

$$A-2B=0 \qquad A=2B$$

$$\frac{2}{3(s+1)} + \frac{1}{3(s-2)} \leftrightarrow \frac{2}{3} e^{-t}\theta(t) + \frac{1}{3} e^{2t}\theta(t) = f(t)$$

$$\lim_{t \to +0} f(t) = \lim_{t \to +0} \frac{2}{3} e^{-t}\theta(t) + \frac{1}{3} e^{2t}\theta(t) \to$$

$x^0 = 1$

$$\to \frac{2}{3} + \frac{1}{3} = 1$$