S 88/7a) $F(x) = A \cdot \ln(1-x) + B \ln(x+2)$, $]-2,1[$

$A = ?$

$B = ?$

$F'(x) = f(x)$

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

$s(x) = 1-x$, $s'(x) = -1$, $t(x) = x+2$, $t'(x) = 1$

$= \frac{A}{x-1} + \frac{B}{x+2}$

$\frac{A}{x-1} + \frac{B}{x+2} \equiv \frac{3x+1}{x^2+x-2}$

$\frac{A(x+2) + B(x-1)}{(x-1)(x+2)} \equiv \frac{3x+1}{x^2+x-2}$

$A(x+2) + B(x-1) \equiv 3x+1$

$Ax + 2A + Bx - B \equiv 3x+1$

$x(A+B) + 2A - B \equiv 3x+1$

$\begin{cases} A+B = 3 \\ 2A-B = 1 \end{cases} \quad | \cdot(-2)$

$\begin{cases} -2A-2B = -6 \\ 2A-B = 1 \end{cases}$

$-3B = -5$

$B = \frac{5}{3}$

$A = 3-B = 3-\frac{5}{3} = \frac{4}{3}$

II lehetőség:

$\begin{cases} A+B = 3 \\ 2A-B = 1 \end{cases}$

$3A = 4 \quad | :3$

$A = \frac{4}{3}$

$B = 3-A$

$= 3-\frac{4}{3} = \frac{5}{3}$

V: $A = \frac{4}{3}$ és $B = \frac{5}{3}$

S97/2a $\int_0^{\ln 2} \frac{e^x}{1+e^x}\,dx$

$= \Big/_0^{\ln 2} \ln|\underbrace{1+e^x}_{>0}|$

$= \Big/_0^{\ln 2} \ln(1+e^x)$

$= \ln(1+e^{\ln 2}) - \ln(1+e^0)$

$= \ln(1+2) - \ln(1+1)$

$= \ln 3 - \ln 2$

$= \ln \frac{3}{2}$

$s(x) = 1+e^x$

$s'(x) = e^x$

$\int \frac{f'(x)}{f(x)}\,dx$

$= \ln|f(x)| + C$

s. 19 logaritmi-säännöt