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

$A = ?$

$B = ?$

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

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

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

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

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

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

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

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

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

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

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

$-3B = -5$

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

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

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

S97/2a

$$\int_0^{\ln 2} \frac{\cancel{e^x}}{1+e^x}\,dx$$

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

$s'(x) = e^x$

$$\int \frac{f'(x)}{f(x)}\,dx = F(x)+C$$

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

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

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

$$= \ln 3 - \ln 2$$

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

445a) $(x+2)(2x-3)=0$ TULON NOLLASÄÄNTÖ

$x+2=0$ tai $2x-3=0$

$x=-2$ tai $2x=3 \quad |:2$

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

V: $x=-2$ tai $x=1\frac{1}{2}=\frac{3}{2}$