Zadatak 18. Riješi nejednadžbe:

1) $\int_{-t}^{t} e^x\,dx > \frac{3}{2}$;

2) $\int_{t}^{0} (3^{-2x} - 2\cdot 3^{-x})dx \geqslant 0$.

Rješenje. **1)** $\int_{-t}^{t} e^x\,dx = e^x\Big|_{-t}^{t} = e^t - e^{-t} = e^t - \frac{1}{e^t} = \frac{e^{2t}-1}{e^t}$.

$$\begin{aligned}
\frac{e^{2t}-1}{e^t} &> \frac{3}{2}\\
\frac{e^{2t}-1}{e^t} - \frac{3}{2} &> 0\\
\frac{2e^{2t}-2-3e^t}{2e^t} &> 0\\
2e^{2t}-2-3e^t &> 0\\
2e^{2t}-2-4e^t+e^t &> 0\\
2e^t(e^t-2)+(e^t-2) &> 0\\
(e^t-2)(2e^t+1) &> 0\\
e^t &> 2\\
t &> \ln 2
\end{aligned}$$

2)