10.17 $y = \underbrace{\frac{1}{1+e^{-x}}}_{>0} > 0$ alatt

$$V(a) = \int_{-a}^{0} \frac{e^x/1}{1+e^{-x}}\,dx = \int_{-a}^{0} \frac{e^x}{e^x+1}\,dx = \Big/_{-a}^{0} \ln(e^x+1)$$

$$= \ln(\underbrace{e^0}_{=1}+1) - \ln(e^{-a}+1) = \underline{\ln 2 - \ln(e^{-a}+1)}$$

$$\xrightarrow{a\to\infty} \ln 2 - \ln(\underbrace{e^{-\infty}}_{\frac{1}{e^\infty}=0}+1) = \ln 2 - \underbrace{\ln 1}_{=0} = \underline{\ln 2}$$

K30. $f(x) = \frac{1}{\sqrt[4]{x+1}} > 0$ jelk. val. $]-1,0]$

$$A = \int_{-1}^{0} \frac{1}{\sqrt[4]{x+1}}\,dx$$

$$\int_{t}^{0} \frac{1}{\sqrt[4]{x+1}}\,dx = \int_{t}^{0} 1\cdot(x+1)^{-\frac{1}{4}}\,dx = \Big/_{t}^{0} \frac{4}{3}(x+1)^{\frac{3}{4}}$$

$$= \frac{4}{3}(0+1)^{\frac{3}{4}} - \frac{4}{3}(t+1)^{\frac{3}{4}} \xrightarrow{t\to -1+} \frac{4}{3}\cdot 1 - \frac{4}{3}\cdot 0^{\frac{3}{4}}$$

$$= \frac{4}{3} - 0 = \underline{\frac{4}{3} = A}$$