

Q7

$$D_{\text{TOT}, 1\text{sec}} = D_{\text{AUDIO}, 1\text{sec}} + D_{\text{VIDEO}, 1\text{sec}}$$

$$\begin{aligned} D_{\text{AUDIO}, 1\text{sec}} &= f_c \cdot \frac{\text{bit}}{\text{Samples}} \cdot N^{\circ} \text{channels} = \\ &= 48\text{kHz} \cdot 16 \text{ bit} \cdot 1 = 768000 \text{ b/s} \\ &= 96000 \text{ B/s} \end{aligned}$$

$$D_{\text{VIDEO}, 1\text{sec}} = D_{\text{FRAME}} \cdot \text{FPS} =$$

↳ X · Y · bpp

$$\begin{aligned} &= 1920 \cdot 1080 \cdot 24 \cdot 50 = 2488320000 \text{ b/s} \\ &\quad \text{↳ } \log_2(16 \text{ million}) = 311040000 \text{ B/s} \end{aligned}$$

$$D_{\text{tot}, 1\text{sec}} = \cancel{311136000}$$

$$311136000 \text{ B/s}$$

$$T = \frac{D_{\text{memoria}}}{D_{1\text{sec}}} = \frac{1 \text{ GB}^{\text{1024MB}}}{296,7 \text{ MB/s}} = 3,45 \text{ s}$$