$\bullet \displaystyle\int \frac{1}{x\sqrt{x+1}}\,dx$; utilizar c.v.

$$\int \frac{1}{x\sqrt{x+1}}\,dx = \int \frac{1}{(t^2-1)\cdot\sqrt{t^2}}\,2t\,dt = \circledast$$

$$\begin{Vmatrix} x+1=t^2 \\ x=t^2-1 \\ dx=2t\,dt \end{Vmatrix}$$

$$\circledast = 2\int \frac{1}{t^2-1}\,dt = \circledast^2$$

$$t^2-1=0 \nearrow\begin{matrix} t_1=1 \\ t_2=-1 \end{matrix}$$

$$\frac{1}{t^2-1} = \frac{A}{t-1} + \frac{B}{t+1} = \frac{A(t+1)+B(t-1)}{(t-1)(t+1)}$$

$$1 = A(t+1)+B(t-1)$$

$$t=1 \Rightarrow 1=2A \Rightarrow A=1/2$$
$$t=-1 \Rightarrow 1=-2B \Rightarrow B=-1/2$$

$$\circledast^2 = 2\int\left(\frac{1/2}{t-1} + \frac{-1/2}{t+1}\right)dt = 2\left(\frac{1}{2}\ln|t-1| - \frac{1}{2}\ln|t+1|\right) =$$

$$= \ln|\sqrt{x+1}-1| - \frac{2}{2}\ln|\sqrt{x+1}+1| + C$$

$$x+1=t^2 \Rightarrow t=\sqrt{x+1}$$