10,1,7

Løs diff ligningen

$$(x+1)y' + y - 1 = 0 \quad , x > -1$$

$$y' = \frac{1-y}{x+1}$$, separerer y og setter den på den andre siden

$$y' + \frac{y}{x+1} = \frac{1}{x+1}$$, setter $f(x) = \frac{1}{x+1}$

setter $F(x) = \int f(x)$ $\qquad F(x) = \int \frac{1}{x+1} dx$

$$y' + f(x)y = g(x)$$

Ganger inn $e^{F(x)}$

$$\overset{u}{e^{F(x)}} \overset{v}{y'} + \overbrace{e^{F(x)} f(x)}^{u'} \overset{v}{y} = g(x) e^{F(x)},$$

$$(u \cdot v)' = u \cdot v' + u' \cdot v$$

$$\left(e^{F(x)} y\right)' = g(x) e^{F(x)} \qquad g(x) = f(x)$$

$$e^{F(x)} y = \int g(x) e^{F(x)}$$

$$y = e^{-F(x)} \int g(x) e^{F(x)} \qquad \left(e^{F(x)}\right)^{-1}$$

$$\int x + 1 \cdot \frac{1}{x+y}$$

$$y = \frac{(x+C)}{x+1}$$