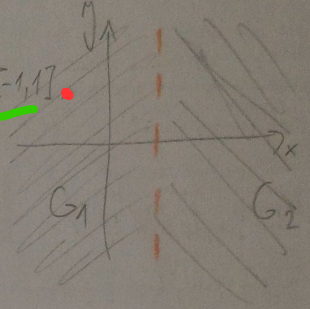
5.) (4) $y' = \frac{1-y}{1-x}$ $\boxed{x \neq 1}$ $y(-1) = 1 \iff \boxed{\begin{matrix} x_0 = -1 \\ y_0 = 1 \end{matrix}}$

a) $\frac{\partial f}{\partial y} = \frac{-1}{1-x}$ $f(x,y)$ spoj. pro $x \neq 1$ ∃! řeš

$\boxed{G_1 = (-\infty, 1) \times \mathbb{R}}$

$G_2 = (1, \infty) \times \mathbb{R}$



b) $\frac{dy}{dx} = \frac{1-y}{1-x}$ / : (1-y)

$\boxed{1-y \neq 0} \iff y \neq 1$

nepotřebuje

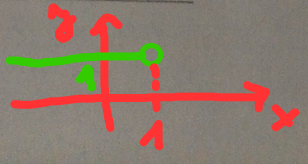
tj. $\boxed{y \equiv 1}$ $\forall x$

je řeš? $y' = 0$

zk.: (*) $0 = \frac{1-1}{1-x} = 0$ $\forall x$ ✓

$y(-1) = 1$

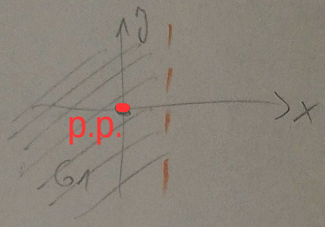
c) $y(x) \equiv 1$ pro $x \in (-\infty, 1)$



6.) $y' = \frac{1-y}{1-x}$ $\boxed{x \neq 1}$ $y(0) = 0$

$G_1 = (-\infty, 1) \times \mathbb{R}$

viz př. 5



b) $\frac{dy}{dx} = \frac{1-y}{1-x}$ / : $(1-y)$ "dx" $\boxed{y \neq 1}$ ($y \equiv 1$ je řeš.)

$\int \frac{1}{1-y}\,dy = \int \frac{1}{1-x}\,dx$

$+\ln|1-y| = +\ln|1-x| + C$ ... jiný zápis konst. $C = \ln K$

$\ln|1-y| = \ln K|1-x|$

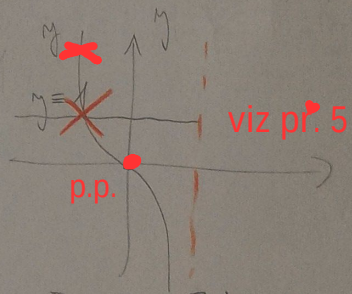
$|1-y| = K|1-x|$

$1-y > 0$ $\quad 1-x > 0$ (na G_1)

$y < 1$ ✓

$1-y = K(1-x)$

O.Ř.: $y = 1 - K(1-x)$



viz př. 5

zaručena ∃!
⇒ nesmí se křížit

c) Cauchy $y(0) = 0$: $0 = 1 - K1 \Rightarrow K = 1$

$y = 1 - (1-x)$

pro $x \in (-\infty, 1)$ ∧ $y \in (-\infty, 1)$

$y = x$

$\boxed{\text{na } (-\infty, 1) \times (-\infty, 1)}$