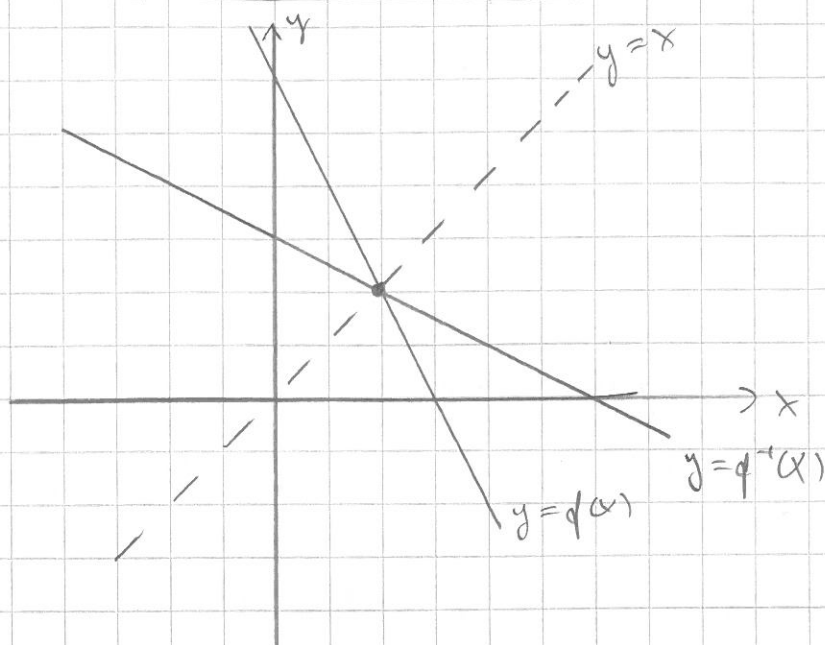


6.2 $f(x) = -2x + 6 = y \Leftrightarrow 6 - y = 2x \quad | :2 \Leftrightarrow x = 3 - \frac{1}{2}y = f^{-1}(y)$
 $\Rightarrow f^{-1}(x) = 3 - \frac{1}{2}x, x \in \mathbb{R}$



6.6 $f(x) = e^x + x + 1$

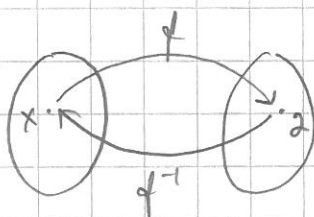
a) f jalk. j. deriiv. $\mathbb{R} : \mathbb{R}$

$f'(x) = \underbrace{e^x}_{>0 \text{ aine}} + 1 > 1 > 0 \Rightarrow f$ on aidosti komeane $\mathbb{R} : \mathbb{R}$

$\Rightarrow f$ lla on k  ntinuumlikus f^{-1}

b) $f(x) = e^x + x + 1 = y \Leftrightarrow x = \dots = f^{-1}(y)$

$\uparrow$
aioasole realkaite



$f^{-1}(2) = x \Leftrightarrow f(x) = e^x + x + 1 = 2$

$\Leftrightarrow x = 0$ (f aid. komeane $\rightarrow$ ei muuta realk.)

$\Rightarrow \underline{f^{-1}(2) = 0}$

c) $f^{-1}(y) = 2 \Leftrightarrow f(2) = y = e^2 + 2 + 1 = 3 + e^2$

6.21 $f: I \rightarrow \mathbb{R}, f(x) = x e^{2x-1}$

$\uparrow$
 $M_f(x \in I)$

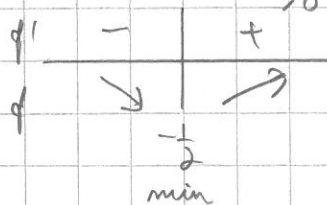
f jalk. j. deriiv. $\mathbb{R} : \mathbb{R}$

$\Gamma D(f, g) = f' \cdot g + f \cdot g'$
 $0 e^{f(x)} = e^{f(x)} \cdot f'(x)$

$f'(x) = 1 \cdot e^{2x-1} + x \cdot e^{2x-1} \cdot 2 = 0$

$\Leftrightarrow e^{2x-1} (1 + 2x) = 0$

$\Leftrightarrow \underbrace{e^{2x-1}}_{>0} = 0 \text{ kui } 1 + 2x = 0 \Leftrightarrow x = -\frac{1}{2}$



$f'(-1) \approx -0,05 < 0, f'(0) \approx 0,37 > 0$

I m  h. v  

$0 \in I$

f^{-1} on olemas

$\Rightarrow \underline{I = [-\frac{1}{2}, \infty[}$