$$f(x) = \frac{1-2x}{x+2}$$

$$f(0) = \frac{1}{2}$$

D:

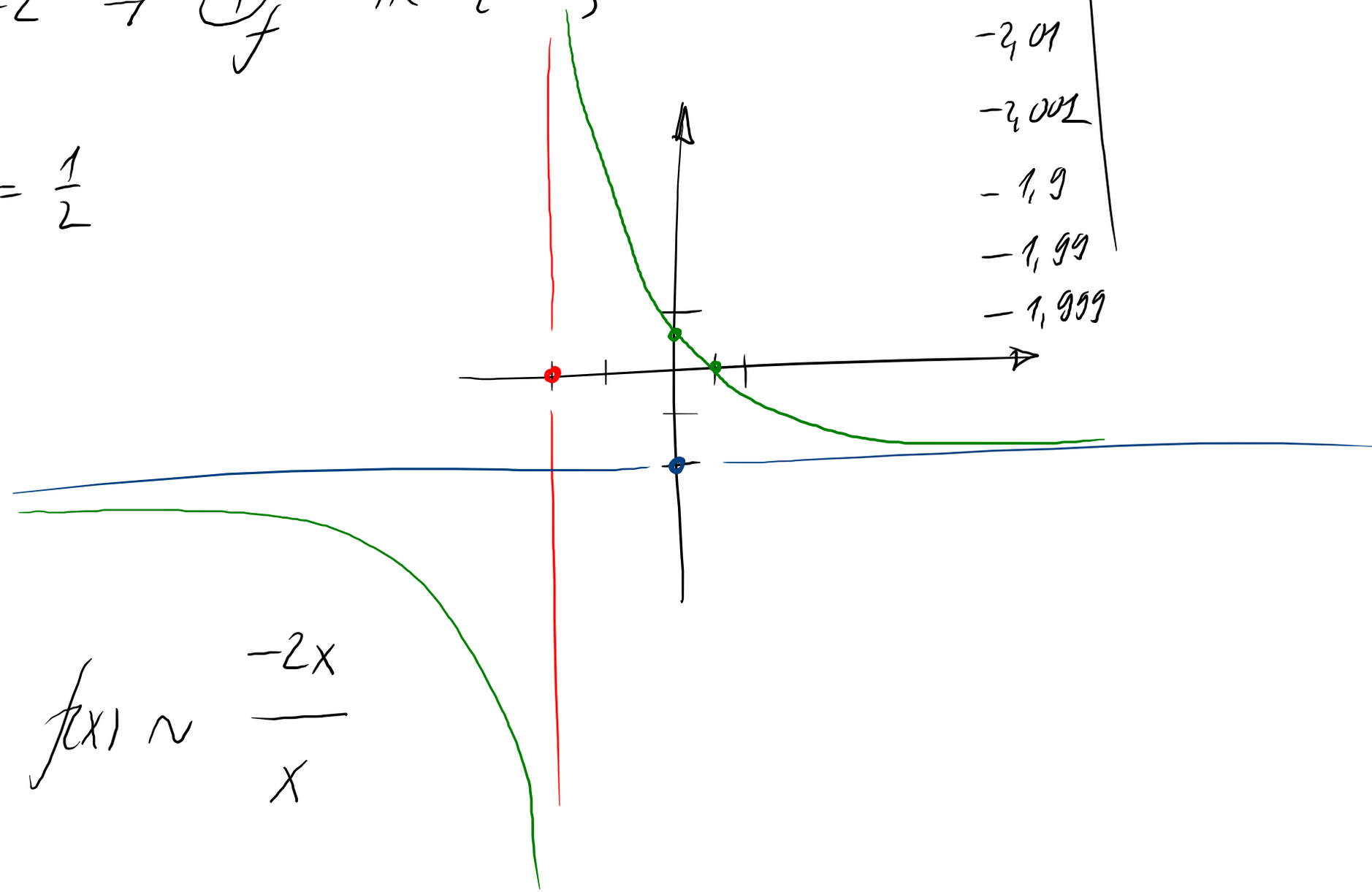
$x+2=0 \iff x=-2 \Rightarrow D_f = \mathbb{R}-\{-2\}$

Zeros:

$1-2x=0 \iff x=\frac{1}{2}$

x	$f(x)$
10	
100	
1000	
10000	
100000	
1000000	$-2,0$

x
$-2,1$
$-2,01$
$-2,001$
$-1,9$
$-1,99$
$-1,999$



$$f(x) \sim \frac{-2x}{x}$$

$$f(x) = \left(-2x - \frac{7}{2}\right) \cdot 3,5$$

(1) $D_f = \mathbb{R}$

(2) $-2x - \frac{7}{2} = 0$

$$-2x = \frac{7}{2} \quad \Big| \div (-2)$$

$$x = -\frac{7}{4}$$

$$x = \frac{3,5}{-2} = -1,75$$

(3)

	$-1,75$	
$+$	0	$-$

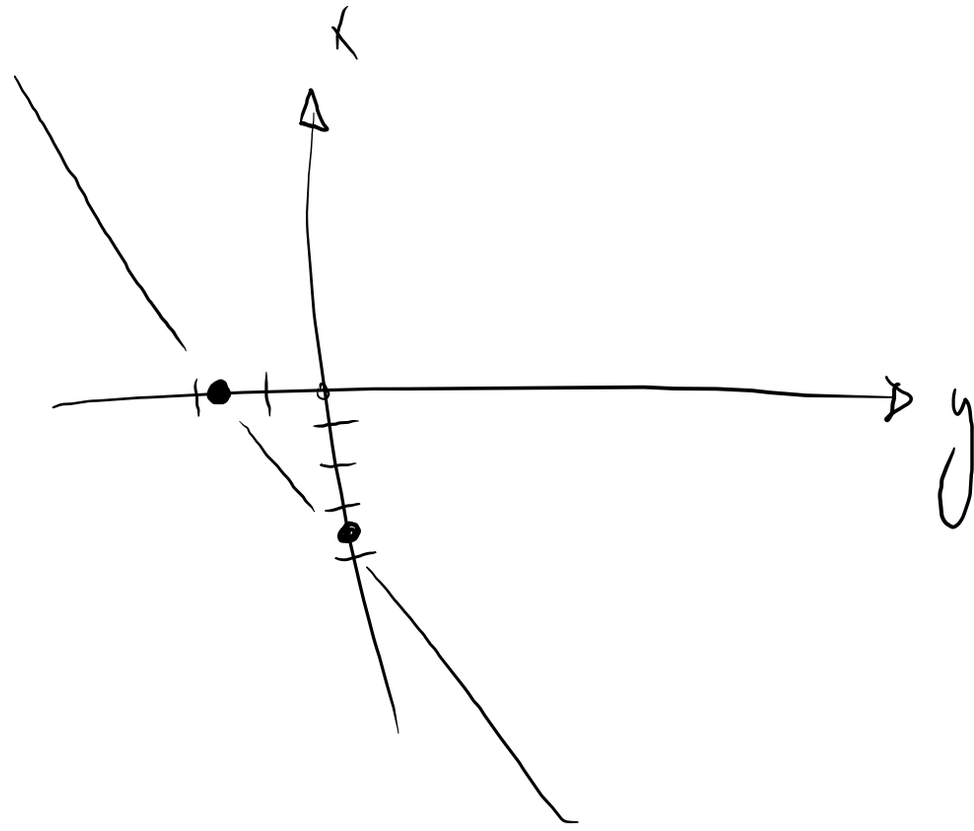
pente négative

$$f(x) = 2x + 6$$

(1) $D_f = \mathbb{R}$

(2) Zéros : $2x + 6 = 0 \iff x = -6/2$

(3) Signe



$$\frac{1}{2}x^2 + x - \frac{1}{2} = 0$$

$$a = \frac{1}{2} \quad b = 1 \quad c = -\frac{1}{2}$$

$$\Delta = 1^2 - 4 \cdot \frac{1}{2} \cdot \left(-\frac{1}{2}\right)$$

$$= 1 + 1 = 2$$

$$x = \frac{-1 \pm \sqrt{2}}{1} = -1 \pm \sqrt{2}$$

- $0{,}4142$
- $-2{,}4142$

$c \neq 0$

$$f(x) = \frac{ax+b}{cx+d}$$

à étudier

1. D_f
2. zéros
3. signe
4. Asymptote
5. Graphe

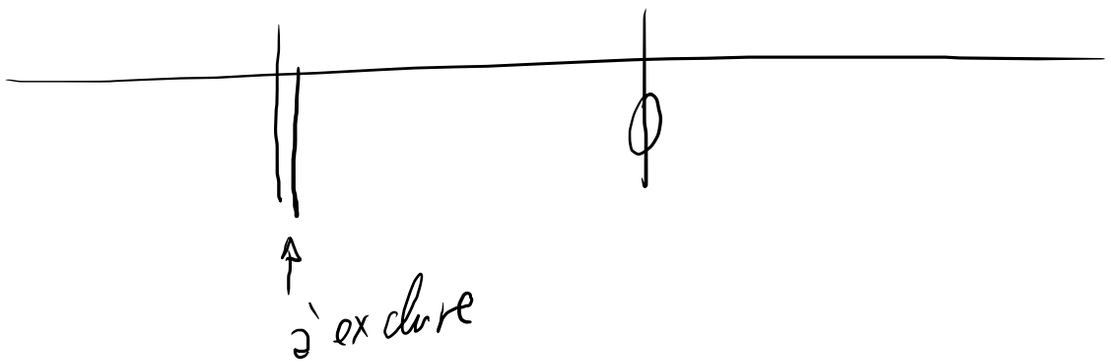
(1) $D_f = \mathbb{R} - \left\{-\frac{d}{c}\right\}$

$$cx+d=0 \Leftrightarrow x = \frac{-d}{c}$$

(2) $ax+b=0 \Leftrightarrow x = -b/a$

zéro : $-b/a$

(3)



(4)

$$f(x) = \frac{3x+4}{4x+3}$$

$$f(-0{,}75) = \frac{3\cdot(-0{,}75)+4}{4\cdot(-0{,}75)+3} = \frac{1{,}75}{-3+3} = \frac{1{,}75}{0} \not\in$$

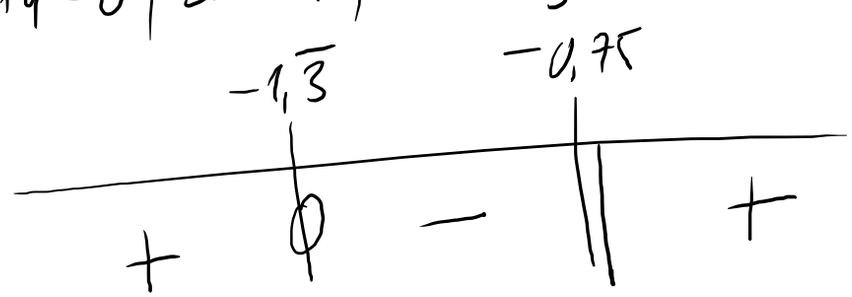
$$\frac{0}{-5{,}2+3} = \frac{0}{-2{,}2} = 0 \quad \checkmark$$

(1) $D_f = \mathbb{R} - \{0{,}75\}$ $4x+3=0 \mid x = -\frac{3}{4} = -0{,}75$

$$f(-1{,}\overline{3}) = \frac{3(-1{,}\overline{3})+4}{4\cdot(-1{,}\overline{3})+3} = \frac{0}{0\neq} = 0$$

(2) $3x+4=0 \mid 3x=-4 \mid x = -\frac{4}{3} = -1{,}\overline{3}$

(3)



$$f(0) = \frac{4}{3} = 1{,}\overline{3} > 0$$

↑ ∈ exclure

(4) Asymptotes

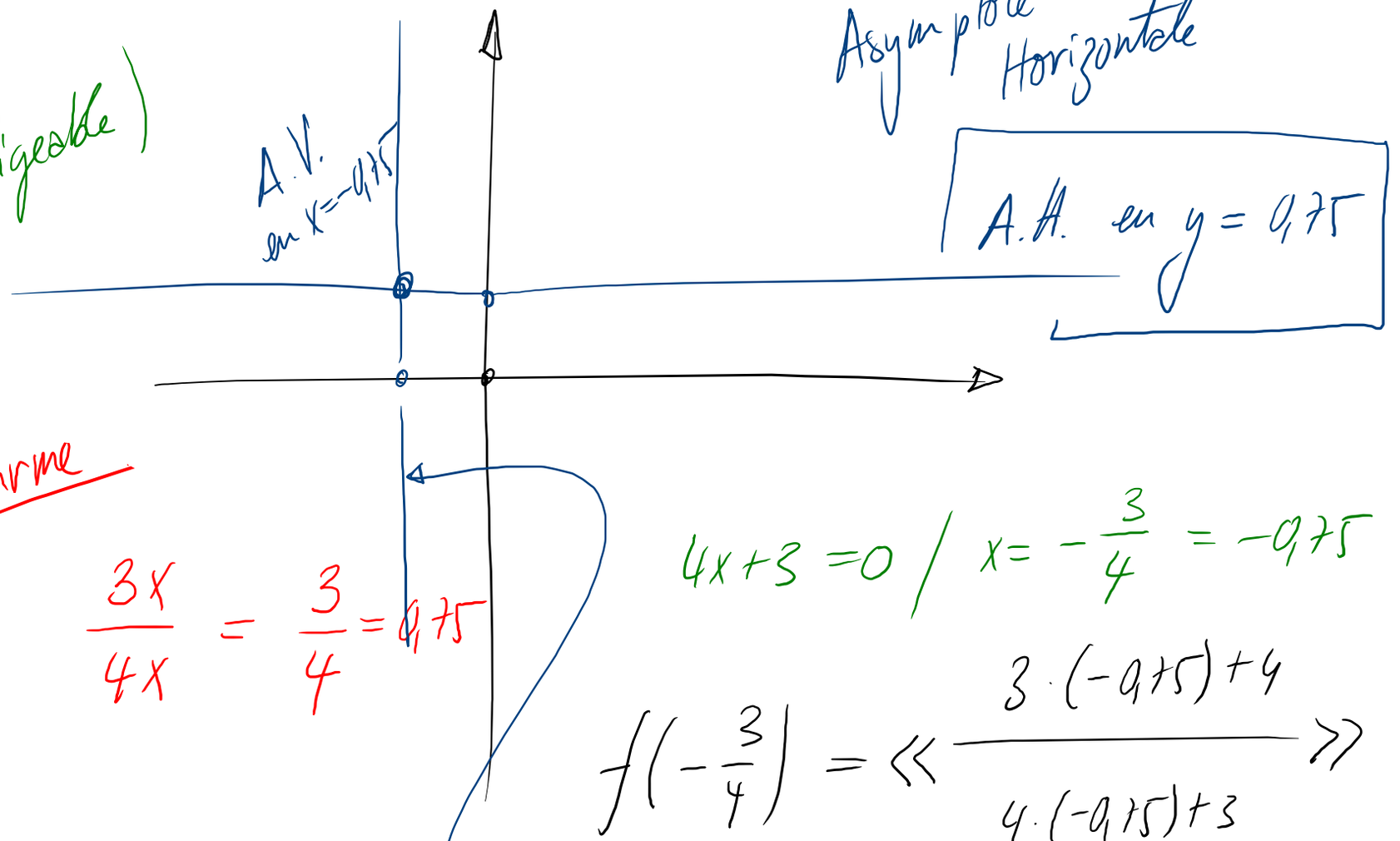
$$\frac{3x+4}{4x+3}$$

(négligeable)

#zeros

$$\frac{3x+4}{4x+3} \xrightarrow{x \to +\infty} \frac{3x}{4x} = \frac{3}{4} = 0{,}75$$

théorème



$$4x+3=0 \;/\; x = -\frac{3}{4} = -0{,}75$$

$$f\left(-\frac{3}{4}\right) = \ll \frac{3\cdot(-0{,}75)+4}{4\cdot(-0{,}75)+3} \gg$$

$$= \ll \frac{1{,}75}{0} \gg = \infty$$

A.V. en $x = -0{,}75$

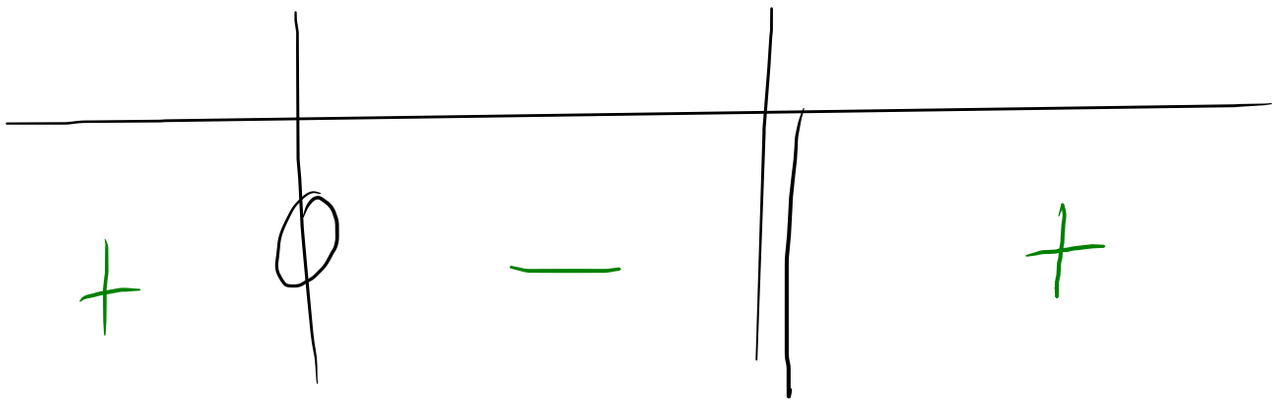
$$f(x) = \frac{3x+4}{4x+3}$$

$f(-1,\overline{3}) = 0$ zero

$f(-0,75)$ impossible

algèbre

$-1,\overline{3}$ $\quad -0,75$ $\quad 0$



$$f(0) = \frac{4}{3} > 0$$

$$\left(\frac{ax+b}{cx+d}\right)' = \frac{a(cx+d) - (ax+b)\cdot c}{(cx+d)^2}$$

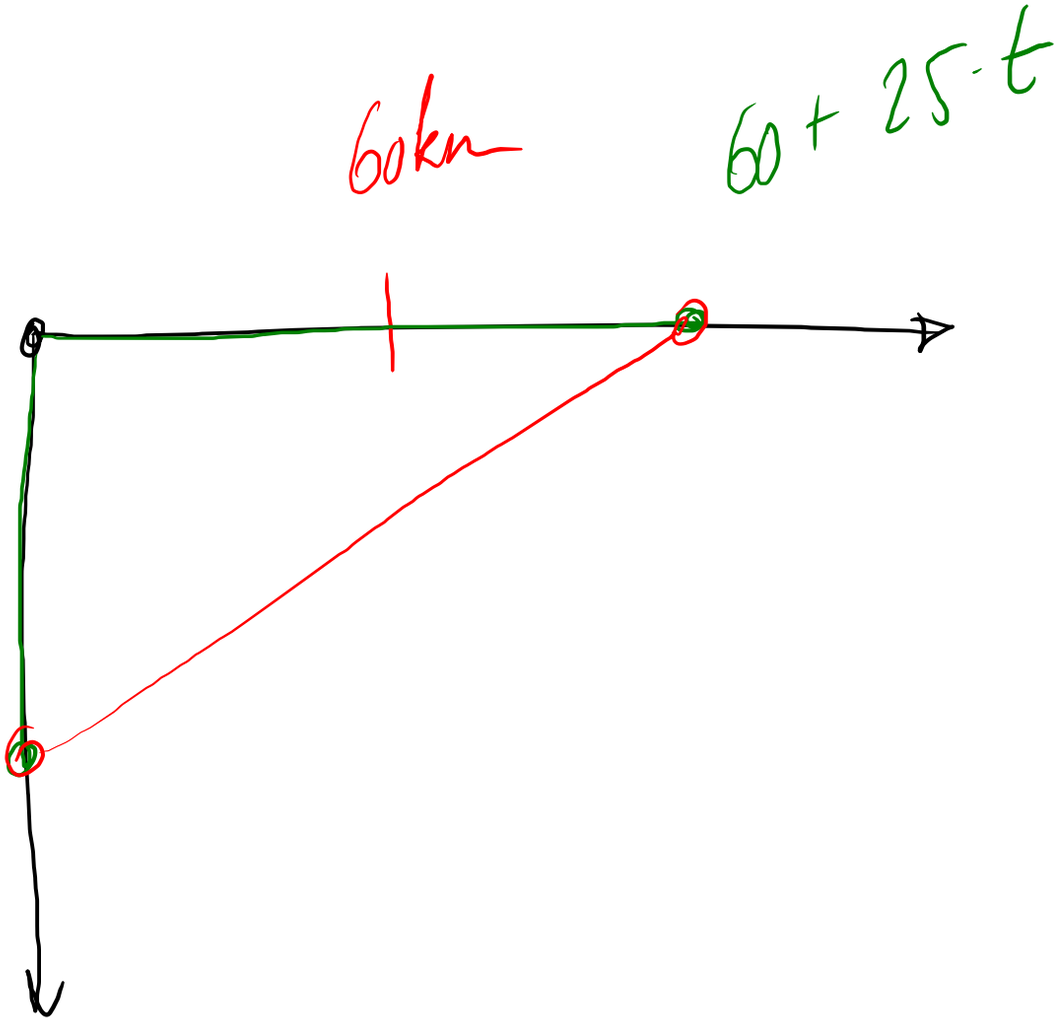
$$= \frac{acx + ad - acx - bc}{(cx+d)^2}$$

$$= \frac{ad - bc}{(cx+d)^2}$$

$$(ad - bc) \cdot \frac{-1}{(cx+d)^4} \cdot 2(cx+d)\cdot c$$

$$- (ad - bc)\frac{2c}{(cx+d)^3}$$

$$\left(\frac{1}{\varphi(x)}\right)' = -\frac{1}{\varphi(x)^2} \cdot \varphi'(x)$$


60km
60 + 25 · t