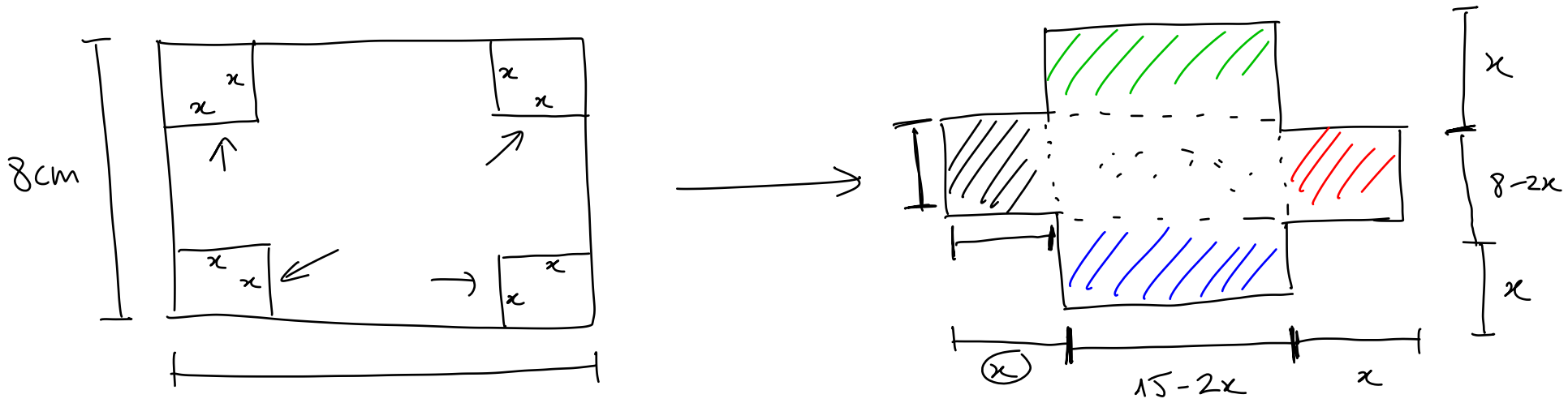
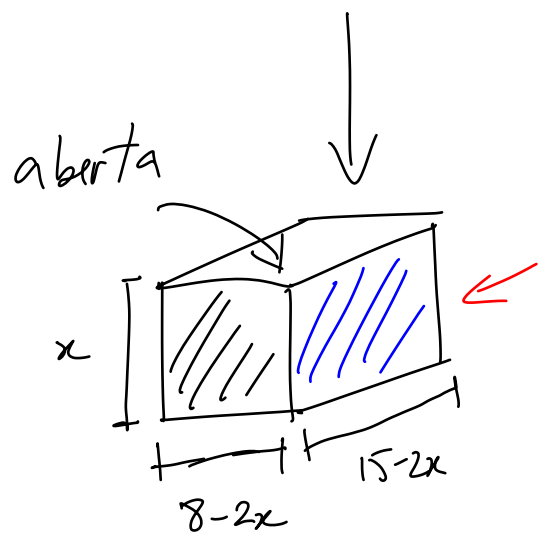
$$f(x) = \frac{x^2 - x}{x - 1} = \frac{x(x-1)}{x-1} = x$$

$$g(x) = x$$

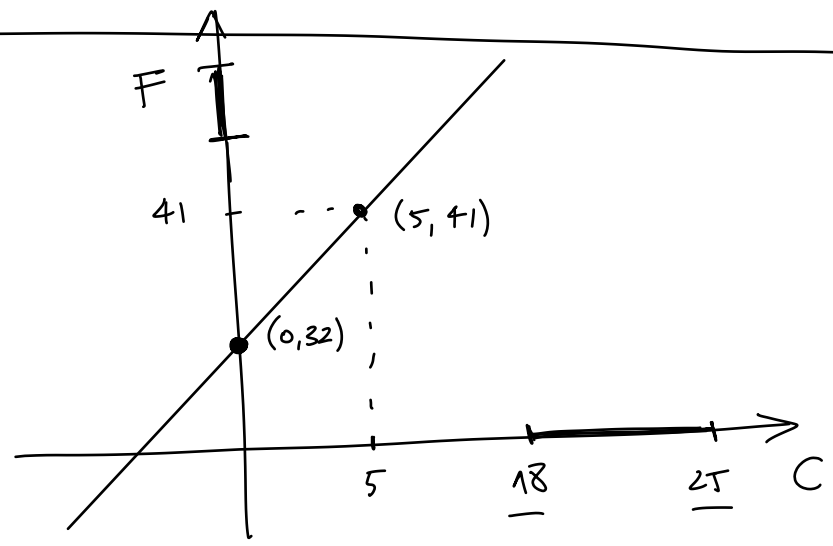


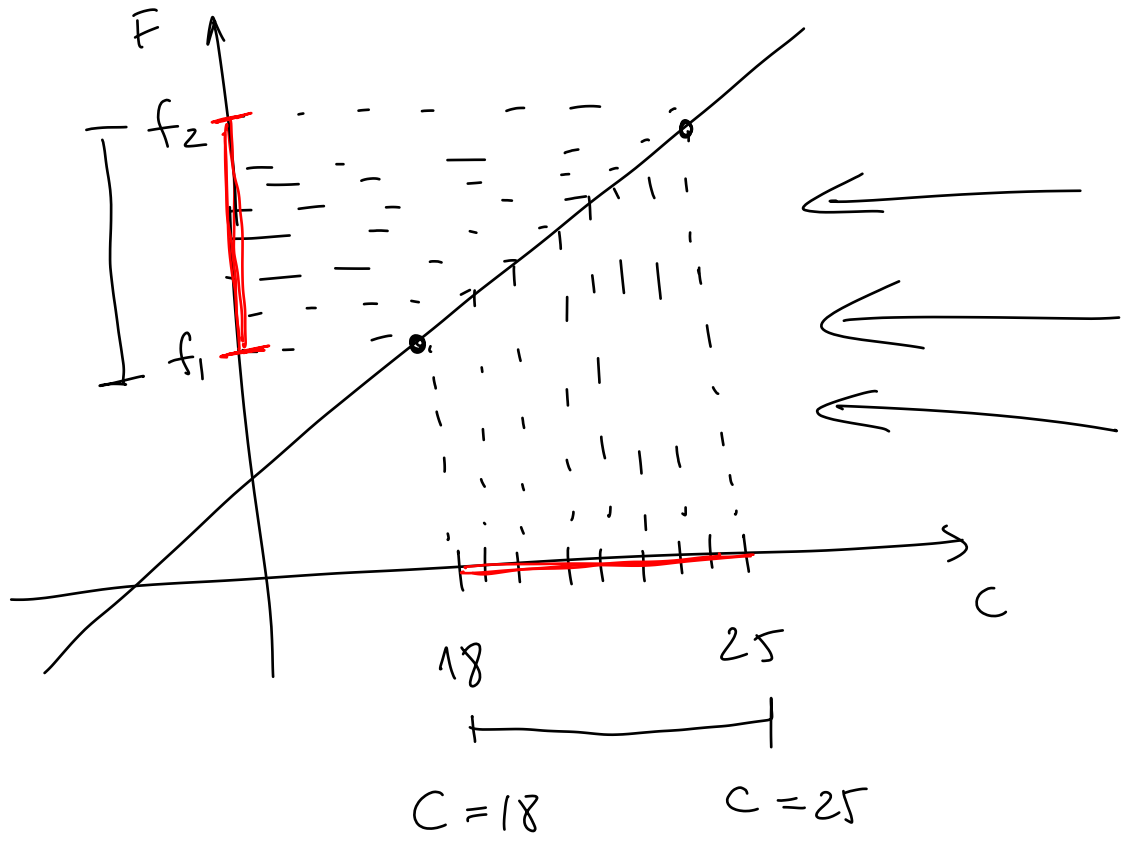
$$V = (8-2x)(15-2x)\,x$$



$$F = \frac{9}{5}C + 32 \qquad \text{(reta)}$$

$$\begin{cases} C = 0 \Rightarrow F = 32 \\ C = 5 \Rightarrow F = \frac{9}{\cancel{5}}\cdot\cancel{5} + 32 = 41 \end{cases}$$





$y = ax^2 + bx + c$, $a \neq 0$

$a > 0$ 

$a < 0$ 

$f(x)$
$\|$
$y = x^2 + 6x + 9$

$\rightarrow \quad x^2 + 6x + 9 = 0 \quad \leftarrow$

$x^2 + \underline{2 \cdot 3 \cdot x} + 9 = 0$

$\Rightarrow (x+3)^2 = 0$

$\sqrt{(x+3)^2} = 0$

$|x+3| = 0$

$\Rightarrow \begin{cases} x+3 = 0 \text{ , si } x \geq 3 \\ \text{ou} \\ -(x+3) = 0 \text{ , si } x < 3 \end{cases}$

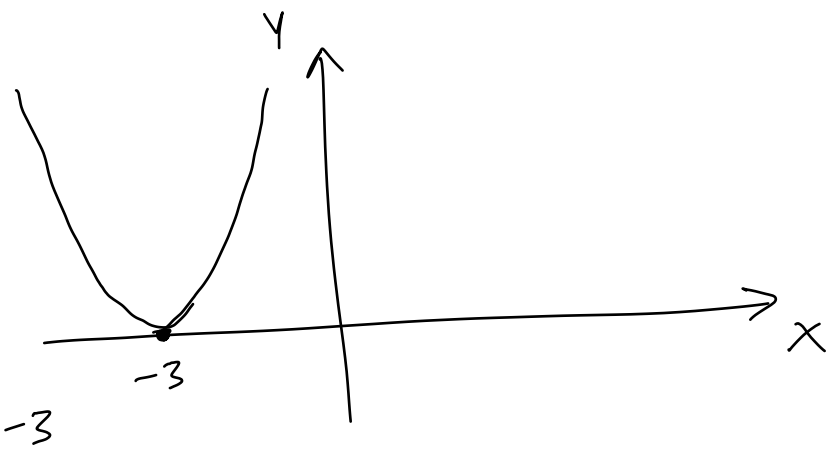
$\Rightarrow \begin{cases} x = -3 \\ -x - 3 = 0 \end{cases} \Rightarrow \begin{cases} x = -3 \\ -x = 3 \end{cases} \Rightarrow \begin{cases} x = -3 \\ x = -3 \end{cases}$

$(x-2)^2 = (x-2)(x-2) = x^2 - 2 \cdot (-2) \cdot x + (-2)^2$

$= x^2 + 4x + 4$

$(x+a)^2 = x^2 + 2ax + a^2$

$|x+3| = \begin{cases} x+3 \text{ , si } x-3 \geq 0 \\ -(x+3) \text{ , si } x-3 < 0 \end{cases}$



$x^2 + 18x - 19 = 0$ (*)

$\Rightarrow x^2 + 2 \cdot 9 \cdot x - 19 = 0$

$(x+9)^2 = x^2 + 2 \cdot 9x + 81$

$= x^2 + 18x + 81$ $\leftarrow$

$x^2 + 18x - 19 + 81 - 81 = 0$ (*)

$=0$

$\Rightarrow x^2 + 18x + 81 = 19 + 81$

$(x+9)^2 = 100$

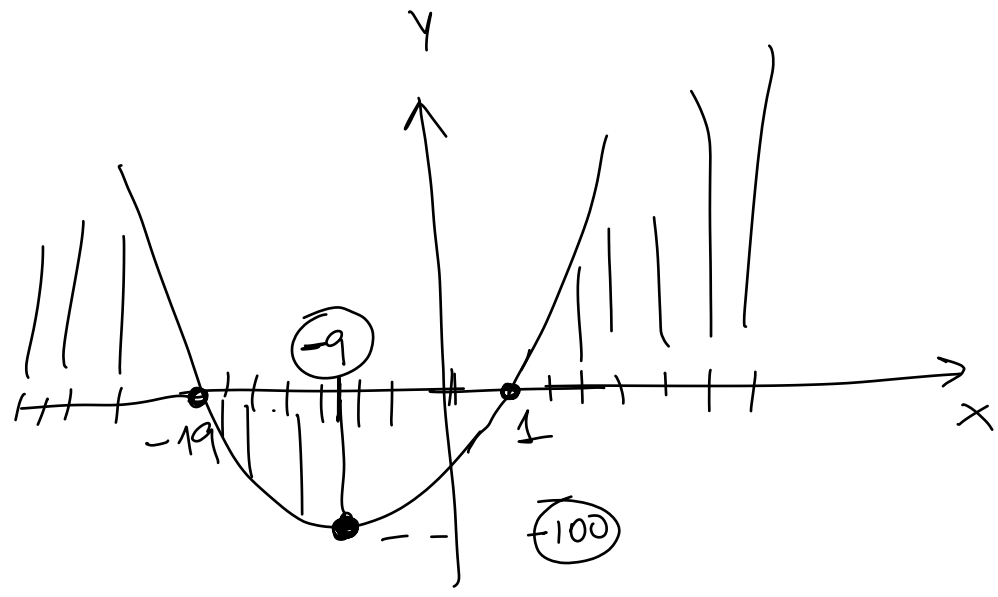
≥ 0

$(x+9)^2 = 0 \Leftrightarrow x + 9 = 0$

$\Leftrightarrow x = -9$

$(x-a)^2 = x^2 - 2ax + a^2$

$(x+a)^2 = x^2 + 2ax + a^2$



$\underbrace{(x+9)^2 - 100}_{f(x)} = 0$

$f(-9) = -100$

$\sqrt{(x+9)^2} = \sqrt{100}$

$|x+9| = 10$

$x + 9 = 10 \Rightarrow x = 1$

$x + 9 = -10 \Rightarrow x = -19$

$$f \circ g = f(g(x)) = f(\bigstar) =$$

$f(\bigcirc) = \bigcirc^2 - 1$

$g(x) = 2x + 1$

$$f(g(x)) = f(2x+1) = (2x+1)^2 - 1$$