$f(x) = \sqrt{x^2-4x} - x$ $\qquad D_f = \{x \in \mathbb{R} / x^2-4x \geq 0\} = \{x \in \mathbb{R} / x \leq 0 \cup x \geq 4\}$.

$(f \circ f)(x) = f\left(\sqrt{x^2-4x} - x\right)$

$$D_{(f \circ f)(x)} = \left\{ x \in \mathbb{R} \,/\, \sqrt{x^2-4x} - x \leq 0 \cup \sqrt{x^2-4x} - x \geq 4 \right\}$$

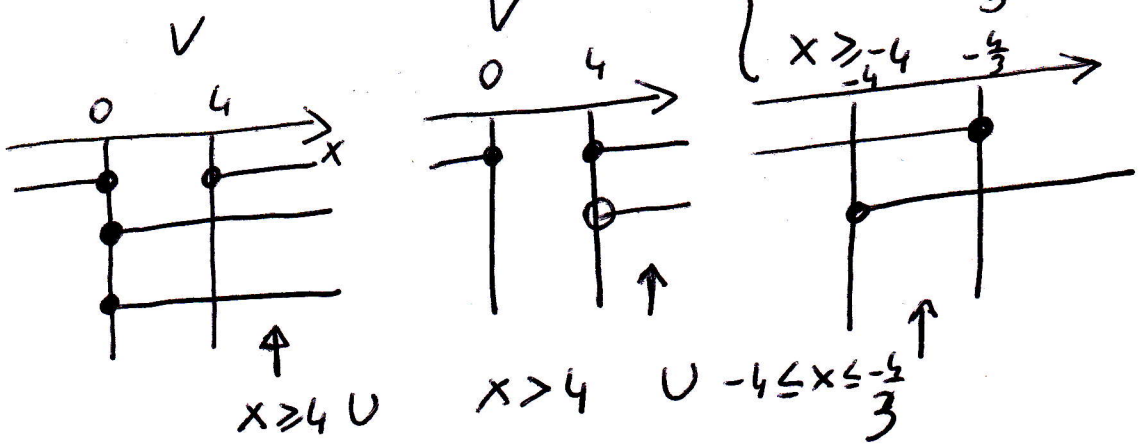
$$\sqrt{x^2-4x} \leq x \cup \sqrt{x^2-4x} \geq 4+x$$

$$\Downarrow \qquad\qquad \Downarrow$$

$$\begin{cases} x^2-4x \geq 0 \\ x \geq 0 \\ x^2-4x \leq x^2 \end{cases} \cup \begin{cases} x^2-4x \geq 0 \\ 4+x < 0 \end{cases} \cup \begin{cases} x^2-4x \geq (4+x)^2 \\ 4+x \geq 0 \end{cases}$$

$$\begin{cases} x \leq 0 \cup x \geq 4 \\ x \geq 0 \\ x \geq 0 \end{cases} \cup \begin{cases} x \leq 0 \cup x \geq 4 \\ x > 4 \end{cases} \cup \begin{cases} x^2-4x \geq 16 + x^2 + 8x \\ x \geq -4 \end{cases}$$

$$\begin{cases} -12x \leq 16 \\ x \geq -4 \end{cases} \quad x \geq -\frac{16}{12} = -\frac{4}{3}$$



$x \geq 4 \cup \quad x > 4 \quad \cup \; -4 \leq x \leq -\frac{4}{3}$

$D_{(f \circ f)(x)}$: $\boxed{-4 \leq x \leq -\frac{4}{3} \cup x \geq 4}$