Solution 3-2

$f(x) = x^3 - 3x + 2$

$D_f =]-\infty, +\infty[$

x	$-\infty$	$+\infty$

$f(x) = \dfrac{x}{x-2}$

$x \in D_f \iff x - 2 \neq 0$

$\iff x \neq 2$

x	$-\infty$	2	$+\infty$
		‖	
		‖	

$D_f =]-\infty, 2[\cup]2, +\infty[$

$f(x) = \dfrac{x^3}{x^2 - 1}$

$x \in D_f \iff x^2 - 1 \neq 0$

$\iff x^2 \neq 1$

x	$-\infty$	-1	1	$+\infty$
		‖	‖	
		‖	‖	

$x \neq 1 \quad ; x \neq -1$

$D_f =]-\infty, -1[\cup]-1, 1[\cup]1, +\infty[$

$f(x) = \dfrac{x+1}{x^2 + 2x - 3}$

$x \in D_f \iff x^2 + 2x - 3 \neq 0$

$\iff x \neq 1 \quad ; x \neq -3$

x	$-\infty$	-3	1	$+\infty$
		‖	‖	
		‖	‖	

$D_f =]-\infty, -3[\cup]-3, 1[\cup]1, +\infty[$

$f(x) = \dfrac{x}{x^2 + 2}$

x	$-\infty$	$+\infty$

$x \in D_f \iff x^2 + 2 \neq 0 \iff x^2 \neq -2$ (Vraie $\forall x \in \mathbb{R}$)

Solution 3-3

$f(x) = x - \sqrt{x-1}$

$x \in D_f \iff x - 1 \geq 0$

$\iff x \geq 1$

$D_f = [1, +\infty[$

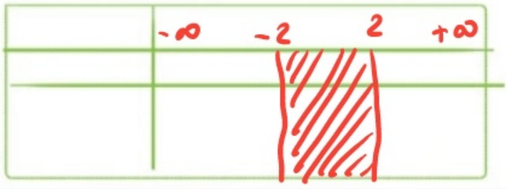
x	1	$+\infty$

$f(x) = 2x + \sqrt{x^2-4}$

$x \in D_f \iff x^2 - 4 \geq 0$

	$-\infty$		-2		2		$+\infty$
x^2-4		$+$	0	$-$	0	$+$	

$D_f =]-\infty, -2] \cup [2, +\infty[$

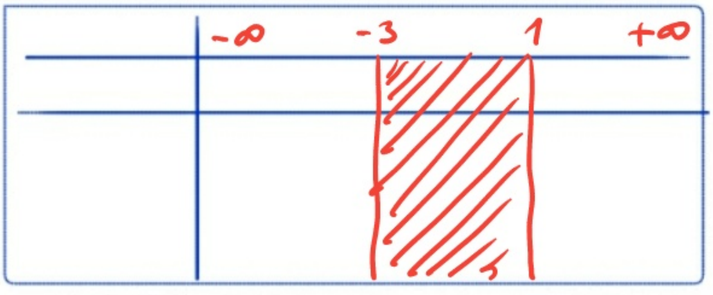


$f(x) = \sqrt{x^2+2x-3}$

$x \in D_f \iff x^2 + 2x - 3 \geq 0$

	$-\infty$		-3		1		$+\infty$
x^2+2x-3		$+$	0	$-$	0	$+$	

$D_f =]-\infty, -3] \cup [1, +\infty[$

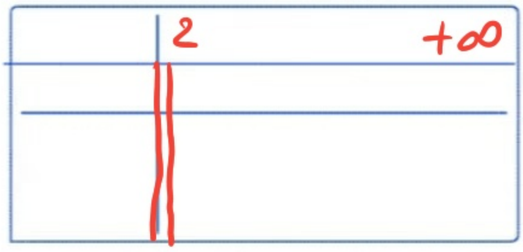


$$f(x) = \frac{x-1}{\sqrt{x-2}}$$

$$x \in D_f \iff x-2 > 0$$

$$\iff x > 2$$

$$D_f =]2, +\infty[$$



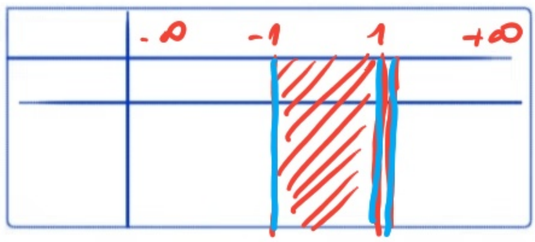
Continuité 3-4

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

$$x \in D_f \iff \frac{x+1}{x-1} \geqslant 0 \quad \text{et} \quad x - 1 \neq 0$$

x	$-\infty$		-1		1		$+\infty$
$x+1$		$-$	0	$+$		$+$	
$x-1$		$-$		$-$	0	$+$	
$\frac{x+1}{x-1}$		$+$	0	$-$	$\|\|$	$+$	

$$D_f =]-\infty, -1] \cup]1, +\infty[$$



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

$$x \in D_f \iff x \geqslant 0 \quad \text{et} \quad x - 1 \neq 0$$

$$\iff x \geqslant 0 \quad \text{et} \quad x \neq 1$$

$$D_f = [0, 1[\cup]1, +\infty[$$

x	0		1		$+\infty$
	0		$\|\|$		