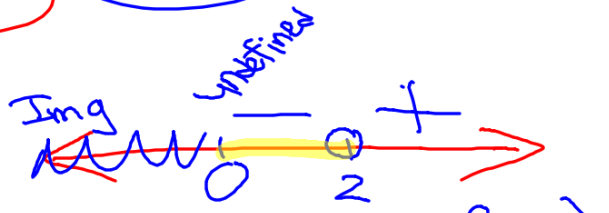
$|-2| = 2$

Ex3

$\frac{x-2}{\sqrt{x}} < 0$

$x \neq 0$

$x \geq 0$



Solutions: $x \in (0,2)$

belongs.

Ex4

$\frac{x-2}{|x|} < 0$ $\quad x \neq 0$

$x = 2$

~~$(-\infty, 2)$~~

solution $x \in$ ~~$(-\infty, 2)$~~

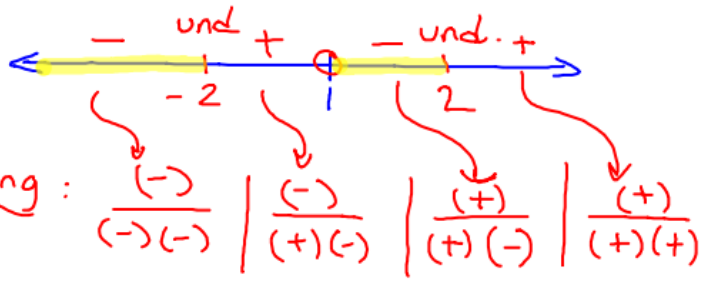
$(-\infty, 0) \cup (0, 2)$

33

$$\frac{x-1}{x^2-4} < 0$$

- Factor N & D
- Let N=0 → x-int (zeros)
- Let D = 0 undefined values (V.A)

$$\frac{x-1}{(x+2)(x-2)} < 0$$



testing: $\frac{(-)}{(-)(-)}$ | $\frac{(-)}{(+)(-)}$ | $\frac{(+)}{(+)(-)}$ | $\frac{(+)}{(+)(+)}$

$$x \in (-\infty, -2) \cup (1, 2)$$

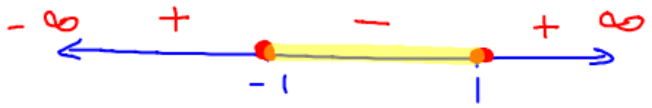
35

$$\frac{x^2-1}{x^2+1} \leq 0 \quad \text{or} \quad = 0$$

$$\frac{(x-1)(x+1)}{x^2+1} \leq 0$$

Always + : x^2+1

$x^2+1=0$
$-1 \quad -1$
$x^2 = -1$
No sol
No undefined value



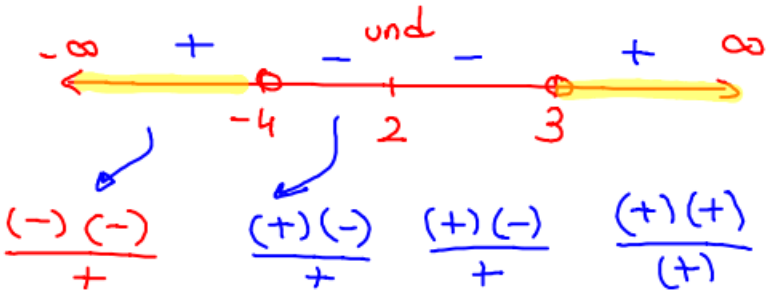
$\frac{(-)(-)}{(+)}$ $\frac{(-)(+)}{(+)}$ $\frac{(+)(+)}{(+)}$

$$x \in [-1, 1]$$

#37

$$\frac{x^2+x-12}{x^2-4x+4} > 0$$

$$\frac{(x+4)(x-3)}{(x-2)^2} > 0$$



$$\frac{(-)(-)}{+} \qquad \frac{(+)(-)}{+} \qquad \frac{(+)(-)}{+} \qquad \frac{(+)(+)}{(+)}$$

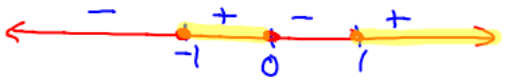
$$x \in (-\infty, -4) \cup (3, \infty)$$

#39 $\dfrac{x^3-x}{x^2+1} \geq 0$

$\dfrac{x(x^2-1)}{x^2+1} \geq 0$ (+ or 0)

Always + : x^2+1

$\dfrac{x(x-1)(x+1)}{x^2+1} \geq 0$



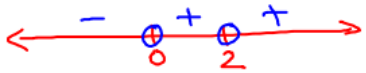
$x \in [-1,0] \cup [1,\infty)$

x

#41 $x|x-2| > 0$

Always +

$x \in (0,2) \cup (2,\infty)$



#43 $(2x-1)\sqrt{x+4} < 0$

Always +

$(-4, \frac{1}{2})$