

$$\begin{aligned} a \geq 0 &\Rightarrow |a| = a \\ a < 0 &\Rightarrow |a| = -a \end{aligned}$$

f) $|x-5| < 7$

	$(-\infty, 5)$	5	$(5, \infty)$
$x-5$	-	0	+
$ x-5 $	$-x+5$		$x-5$
	$-x+5 < 7$		$x-5 < 7$
	$-x < 2$		$x < 12$
	$x > -2$		
	$x \in (-2, 5)$		$x \in (5, 12)$

$x \in (-2, 12)$

$zk: -3, 0, 10, 14$

g) $|1-x| + |x| > 3$

	$(-\infty, 0)$	0	$(0, 1)$	1	$(1, +\infty)$
$1-x$	+	+	+	0	-
x	-	0	+	+	+
	(1)		(2)		(3)
	$x \in (-\infty, -1)$		$\emptyset$		$x \in (2, \infty)$

(1) $1-x+(-x) > 3$
 $1-2x > 3$
 $-2 > 2x$
 $-1 > x$
 $x < -1$

(2) $1-x+x > 3$
 $1 > 3$
 NR

(3) $-(1-x)+x > 3$
 $-1+x+x > 3$
 $-1+2x > 3$
 $2x > 4$
 $x > 2$

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

$zk: -2, 0, 3$

h) $|x+1| + |3-x| \leq 6$

$x \in [-2, 4]$

$zk: -3, 0, 5$

	$(-\infty, -1)$	-1	$(-1, 3)$	3	$(3, +\infty)$
$x+1$	-	0	+	+	+
$3-x$	+	+	+	0	-
	(1)		(2)		(3)
	$x \in (-2, -1)$		$x \in (-1, 3)$		$x \in (3, 4)$

(1) $-(x+1)+3-x \leq 6$
 $-x-1+3-x \leq 6$
 $x \geq -2$

(2) $x+1+3-x \leq 6$
 $4 \leq 6$ VSDY

(3) $x+1-(3-x) \leq 6$
 $x \leq 4$

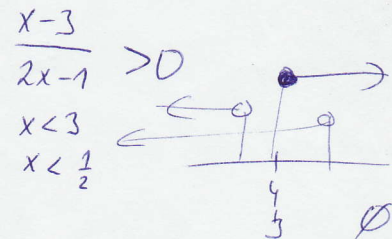
i) $\frac{|3x-4|}{2x-1} > 1$

$\frac{|3x-4| - (2x-1)}{2x-1} > 0$

$x \geq \frac{4}{3}: |3x-4| = 3x-4$

$x-3 > 0 \Rightarrow x > 3$
 $2x-1 > 0 \Rightarrow x > \frac{1}{2}$
 $(3, \infty)$

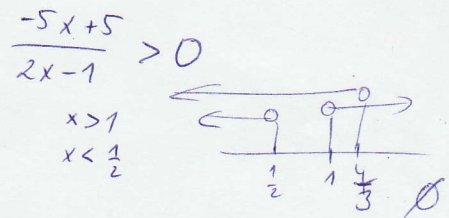
$\frac{3x-4-2x+1}{2x-1} > 0$
 $\frac{x-3}{2x-1} > 0$
 $x-3 < 0 \Rightarrow x < 3$
 $2x-1 < 0 \Rightarrow x < \frac{1}{2}$



$x < \frac{4}{3}: |3x-4| = -3x+4$

$-5x+5 > 0 \Rightarrow x < 1$
 $2x-1 > 0 \Rightarrow x > \frac{1}{2}$
 $(\frac{1}{2}, 1)$

$\frac{-3x+4-2x+1}{2x-1} > 0$
 $\frac{-5x+5}{2x-1} > 0$
 $-5x+5 < 0 \Rightarrow x > 1$
 $2x-1 < 0 \Rightarrow x < \frac{1}{2}$



$x \in (\frac{1}{2}, 1) \cup (3, \infty)$

j) $|x^2-4| \geq 5$

	$(-\infty, -2)$	-2	$(-2, 2)$	2	$(2, \infty)$
$x-2$	-	0	+	+	+
$x+2$	-	0	+	+	+

$x \in (-\infty, -2) \cup (2, \infty): x^2-4 \geq 5$

$x^2-9 \geq 0 \Rightarrow (x-3)(x+3) \geq 0$

$x \in (-2, 2): -x^2+4 \geq 5$
 $x^2+1 \leq 0$ NR

$x \in (-\infty, -3) \cup (3, \infty)$
 $zk: -4, -2, 0, 4$